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ABSTRACT

In 1989, an Illinois Community College Board committee examined the issue of cost effectiveness among the state's community colleges. The individual cost categories examined for the study included direct salary, direct department, direct equipment, building rental, operation and maintenance, academic administration and planning, learning resources, student services, administrative data processing, general administration, and general institutional costs. In addition, the net instructional, full instructional, and total institutional costs were analyzed. All cost analysis for the study was done on a statewide level rather than on a district level, and all costs were adjusted for inflation. Study findings included the following: (1) after adjusting for inflation, unit cost expenditures showed very limited growth between 1980 and 1989, with direct salary, department, and equipment costs actually lower in 1989 than in 1980; (2) operation and maintenance costs, learning resources costs, general administration, and general institutional costs reflected a rising trend; (3) salary costs on a per unit basis declined from $35.20 in 1980 to $31.43 in 1989, while departmental unit costs decreased in real terms from $7.34 to $6.30 in real terms; and (4) in 1980, the real cost per credit hour of instruction was $85.12, and, in 1989, the figure was $82.30. The data suggest that the community colleges in Illinois have operated in a very cost-effective manner during the past 10 years, with the most significant cost increases being attributable to cost factors over which institutions have little control. (JMC)

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COMMUNITY COLLEGE COST EFFECTIVENESS STUDY

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July 1990

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Illinois Community College Board

COMMUNITY COLLEGE COST EFFECTIVENESS STUDY

On September 15, 1989, an Illinois Community College Board (ICCB) committee was created to examine the issue of cost effectiveness among the state's community colleges. Annually, every community college district submits unit cost data to the ICCB for use in developing the annual operating budget request for the Illinois community college system. The committee utilized this unit cost data to prepare the Community College Cost Effectiveness Study. Additional information on specific community college costs is available annually through the Unit Cost Study Report, Salary Survey Report, and Data and Characteristics publication.

Description of Costs

The unit cost analysis accounts for virtually all college costs within a number of cost categories. These costs then are converted to a college net instructional cost, full instructional cost, and total institutional cost. A statewide average cost for each of these broader types of costs also is computed annually.

The individual cost categories examined for this study included direct salary, direct department, direct equipment, building rental, operation and maintenance, academic administration and planning, learning resources, student services, administrative data processing, general administration, and general institutional costs. Additionally, the net instructional, full instructional, and total institutional costs were analyzed. Appendix A presents an explanation of the complete set of costs reviewed for the cost effectiveness study. All cost analysis for this study were done on a statewide level rather than by examining individual districts' costs. Furthermore, all costs considered in this study have been adjusted by the Higher Education Price Index (HEPI) for inflation.

Total Expenditures

Table 1 presents one set of comparative cost data for a 10 year period. Specifically, this table reflects the total unit cost expenditures by type for the period from 1980 to 1989. Figures 1 through 20 reflect this data in graphic form. The majority of costs, after adjusting for inflation, have shown very limited growth over this period. In fact, direct salary costs (Figure 1), direct department costs (Figure 2), and direct equipment costs (Figure 3) in fiscal year 1989 are slightly below the 1980 amounts. This suggests that colleges have done a very commendable job controlling many of the variable costs associated with the educational process.

In contrast, operation and maintenance costs (Figure 5), learning resources costs (Figure 7), general administration (Figure 10), and general institutional costs (Figure 12) reflect a rising trend. A major difference between these costs and the aforementioned costs is that the latter are less controllable. A major component of the general institutional costs, for example, is insurance. During the last three years, insurance costs have soared, thus driving the general institutional costs higher. A community college can do little to mitigate such cost increases.

A slightly different approach to considering operation and maintenance costs is presented in Table 4. Facility maintenance costs and operational efficiency are reflected in this table. The operation and maintenance costs per gross square foot of space have shown a dramatic decrease over the last ten years (see Figure 40). This perhaps is a function of other demands on operational resources resulting in less emphasis on facility maintenance even while total system gross square footage has been increasing. The impact of such deferred maintenance policies may soon be realized in the form of significant capital improvement initiatives.

In fact, the costs for building repair (Figure 15) have been growing in the last ten years. Although these costs measure major repairs, renovations and remodeling which are locally funded, they do not reflect expenditures for the normal operation and maintenance of the physical plant. Normal operation and maintenance costs are accounted for in the operation and maintenance costs (Figure 5). The virtually constant operation and maintenance costs compared with the rising building repair costs tends to indicate that colleges have been very effective at controlling operating costs, but are facing increasing demands for facilities that serve new instructional programs and better accommodate staff and student needs.

While operation and maintenance costs per gross square foot have declined, the efficiency of the system in terms of energy usage has improved. This data is presented on Table 4 and Figure 41. Energy consumption in the last ten years has decreased by approximately 20 percent. Once again this reflects the fact that the community college system as a whole apparently has pursued efforts to become considerably more efficient.

One cost area often considered as a fixed-type cost is academic administration and planning (Figure 6). This cost, in addition to actual academic administration, includes course and curriculum development, and administrative support to respond to institutional reporting needs. The significant growth of academic administration and planning costs over the past ten years likely reflects the efforts of colleges to better serve the needs of their constituents through new programs and expanded sites, and increased demands for reporting both at the state and federal levels. Consequently, academic administration and

planning has tended to increase, particularly in recent years, despite relatively stable enrollment.

A final noteworthy cost area is public service. Public service costs include a college's efforts to provide non-credit educational and service opportunities to its community. As shown in Figure 19, public service costs have grown considerably in recent years. This growth likely is a response to the more prominent role colleges play in serving the social and cultural needs of the community as well as providing unique educational opportunities. This trend should be expected to continue, the more community colleges become integral components of the communities they serve.

The most often used cost measure for Illinois community colleges is the net instructional cost. This cost reflects the actual operating expenditures for the instruction function of a community college, or in other words, the costs most directly associated with providing the primary service of the college. As Figure 13 shows, the net instructional cost after adjusting for inflation has increased only slightly. This indicates that colleges are, in fact, very conscious of costs and have been controlling most instructional costs effectively.

The other two measures of aggregated costs, full instructional cost and total institutional cost, reflect increases in building repair and public service costs, respectively. Each of these measures incorporates a broader array of costs in accounting for all of the institutions costs of operation, not just those associated with the instruction function of the college. Figures 17 and 20 present the full instructional cost and total institutional cost for the state over the ten year period between fiscal year 1980 and 1989.

Expenditures Per Credit Hour

A very meaningful way to present cost information is on a cost per unit basis. In the case of educational costs, the common measure is cost per student semester credit hour. Table 2 presents several cost measures on a per credit hour basis over the ten year period between fiscal year 1980 and 1989, and Figures 21 through 31 provide graphic displays of each of the costs. The set of semester credit hours eligible for state grant reimbursement are presented in Table 3 and Figures 32 through 39. While not the specific credit hours upon which the unit costs are calculated, these credit hours provide a very close approximation of the actual credit hours used in deriving the unit costs.

The unit costs for salary, department, and equipment costs (Figures 21 through 23) emphatically reflect the trend of operational efficiency at the statewide level. Salary costs on a

per unit basis have declined from $35.20 in 1980 to $31.43 in 1989. Departmental unit cost during the same period has decreased in real terms from $7.34 to $6.30. Likewise, unit cost for equipment, the other prominent variable cost category, has fallen from $.98 in 1980 to $.85 in 1989. Again, this reflects the ability of the community college system as a whole to effectively control a significant portion of their costs.

None of the unit cost figures represent significant increases over the ten year period. The increases that were noted previously in the discussion of total expenditures again are reflected in the unit cost data. Specifically, academic administration and planning (Figure 24) has risen by approximately $3.30 over this period. This increase likely is a function of the expanded services offered students and the dramatically increased reporting requirements facing colleges. Likewise, the increase in the general institutional unit cost (Figure 29) is consistent with the total cost discussed previously.

The major unit cost upon which attention should be focused is the net instructional unit cost (Figure 30). This reflects the statewide average cost after adjusting for inflation. The community college system actually has decreased its expenditure per credit hour of instruction during this period. In 1980, the real cost per credit hour was $85.12 and in 1989 the figure was $82.30. This is a major statement concerning the ability of the community college system to provide instruction to a large student population in an extremely cost effective manner. The total institutional unit cost data (Figure 31) only tends to reinforce the positive experience reflected by the net instructional unit cost.

Summary

The data presented and analyzed for this study suggest that community colleges in Illinois have operated in a very cost effective manner during the past ten years. The major cost areas over which an institution has substantial control have reflected only minor increases. The most significant cost increases have been attributable to cost factors over which an institution may have little control. Colleges have been able to effectively manage resources so that comprehensive programs and services are provided in efficient and effective manner.

Table 1

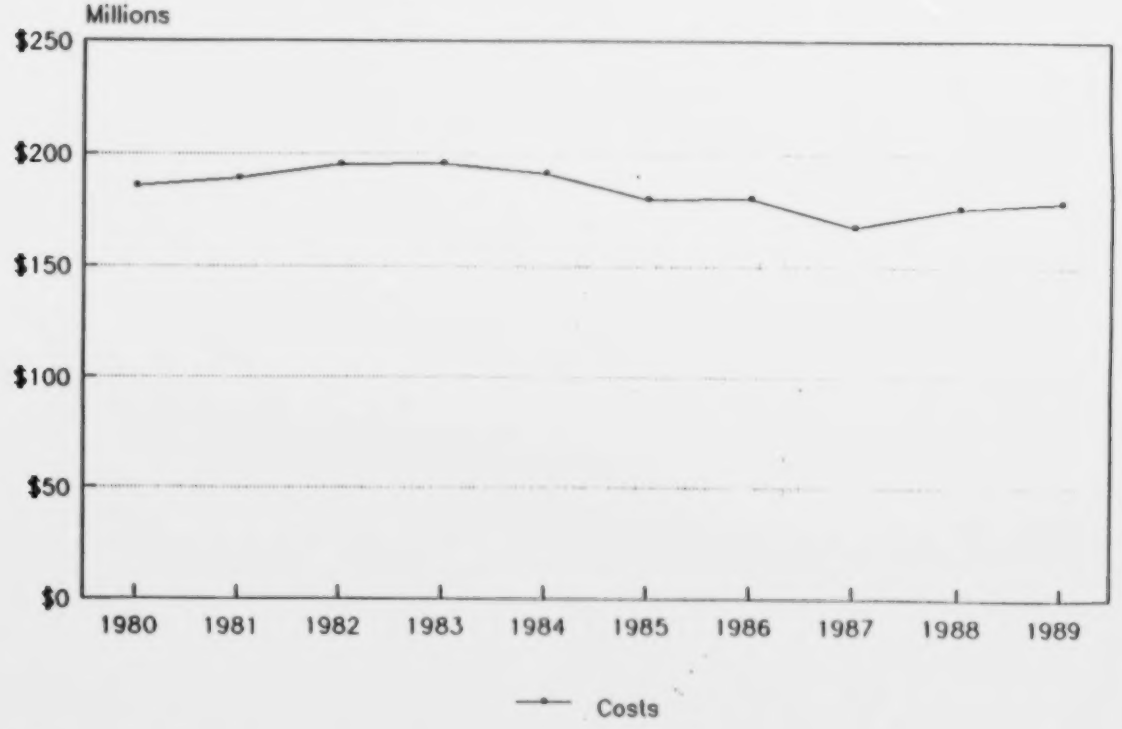
Unit Cost Expenditures Adjusted for Inflation
FY 1980 - 1989

Cost	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Salary	185,248,202	188,816,310	195,090,080	195,403,056	190,994,663	179,763,068	179,958,289	167,383,670	175,757,144	178,451,663
Department	38,382,298	37,625,043	37,569,513	37,527,515	38,947,423	38,356,929	33,139,340	31,953,189	33,254,998	35,768,752
Equipment	5,116,303	4,943,653	6,408,459	5,331,051	7,463,139	5,777,849	5,511,409	5,107,047	4,798,196	4,847,453
Bldg. Rental	7,680,468	4,411,767	4,119,923	3,641,768	2,907,267	2,845,633	2,916,834	2,233,724	3,521,828	2,251,215
Oper & Main.	61,524,962	63,279,478	65,042,502	61,481,165	66,419,620	64,994,784	64,511,560	61,924,229	63,894,140	63,593,546
AAP	21,895,278	30,697,109	28,397,084	33,875,829	31,647,520	31,363,456	35,133,300	36,809,709	40,215,991	42,576,623
Learn Resour	18,854,842	18,750,825	18,816,635	17,933,731	18,943,467	18,000,587	18,332,490	17,021,258	17,986,351	19,181,900
Stu Services	38,217,734	38,755,429	36,991,876	36,705,520	35,622,822	35,568,144	36,237,435	47,690,702	38,566,640	40,018,947
Admin DP	14,330,635	15,007,267	12,754,545	12,511,623	13,164,172	13,266,513	14,553,062	12,615,250	14,484,396	13,724,478
Gen. Admin.	29,347,141	27,967,391	27,177,177	26,658,005	27,118,850	28,465,143	28,673,008	28,089,678	30,343,838	31,937,032
Aux Service	2,094,076	1,702,344	1,911,298	1,744,704	1,564,187	1,718,145	1,491,921	1,555,902	1,790,593	2,451,068
Gen. Insti.	22,601,484	27,119,967	29,332,819	28,734,690	20,356,217	21,121,341	21,729,121	25,208,067	31,226,982	32,437,907
Net Instruc.	445,296,333	459,057,446	463,611,571	461,548,756	455,136,046	441,236,839	442,107,265	437,587,485	455,697,286	467,223,106
Other Local	8,203,623	9,345,655	8,246,730	5,612,194	5,958,782	6,972,685	5,085,621	4,839,424	5,070,654	4,395,829
Bldg Repair	1,180,250	2,206,636	4,374,200	3,861,098	2,842,516	3,744,383	5,517,379	8,713,322	7,484,776	7,616,189
Bldg Deprec	5,646,825	8,771,226	6,973,574	6,209,944	8,522,601	7,541,469	8,555,891	8,241,274	9,065,226	7,884,501
Full Instruc	460,327,031	479,380,963	483,206,076	473,390,894	472,459,945	459,495,375	461,266,156	459,381,505	477,322,215	487,119,626
Org Research	504,619	386,239	98,824	42,385	45,417	23,320	14,759	16,221	15,424	43,500
Pub Service	25,268,453	26,587,727	20,129,357	22,302,649	25,792,976	28,428,645	33,569,656	33,510,478	38,438,496	38,543,690
Total Inst.	486,100,104	506,354,929	503,434,257	499,577,026	498,298,339	487,947,340	494,850,571	492,908,205	515,776,134	525,706,815

FIGURE 1

Direct Salary Costs

Adjusted for Inflation



1983 Dollars

FIGURE 2

Direct Department Costs

Adjusted for Inflation

1983 Dollars

FIGURE 3

Direct Equipment Costs

Adjusted for Inflation

1983 Dollars

FIGURE 4

Building Rental Costs

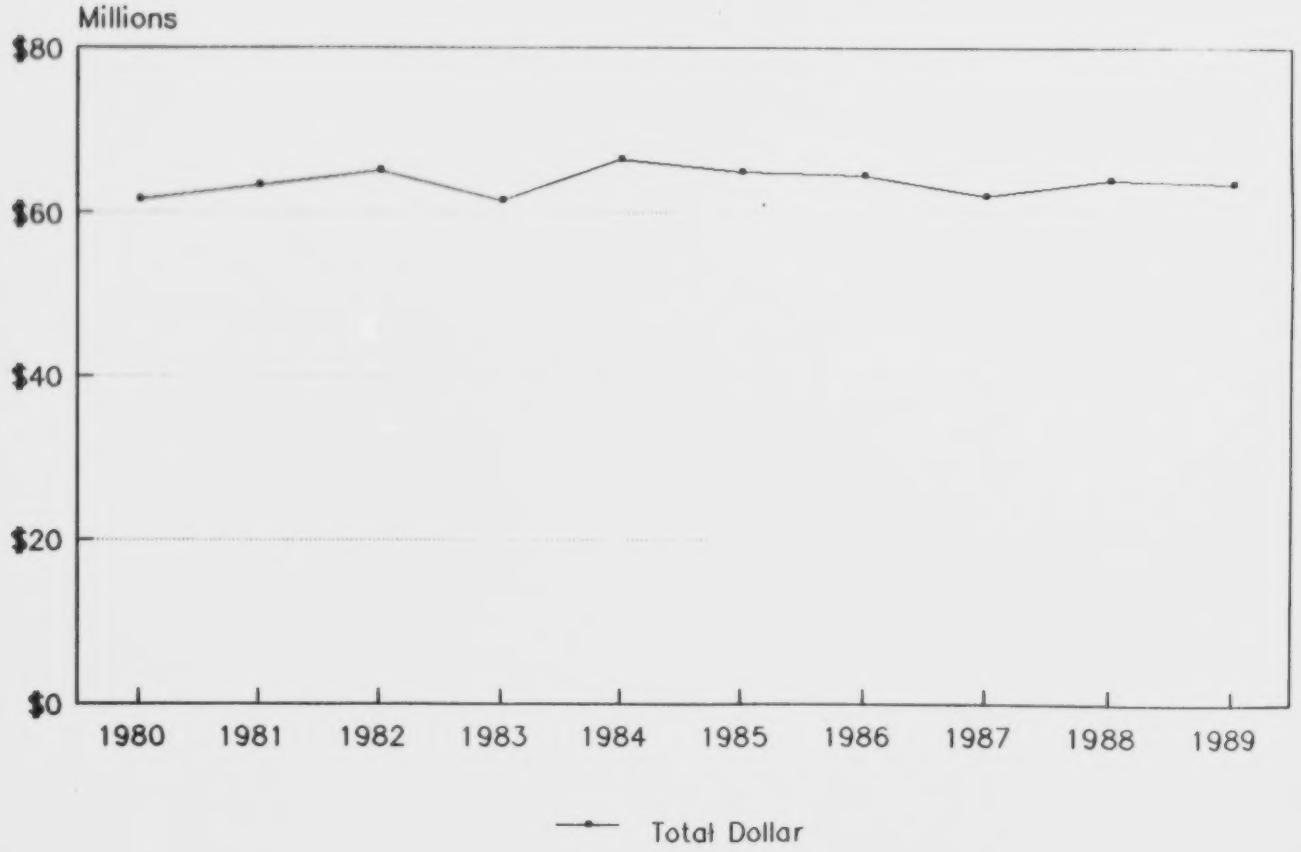
Adjusted for Inflation

1983 Dollars

FIGURE 5

Operation & Maintenance Costs

Adjusted for Inflation

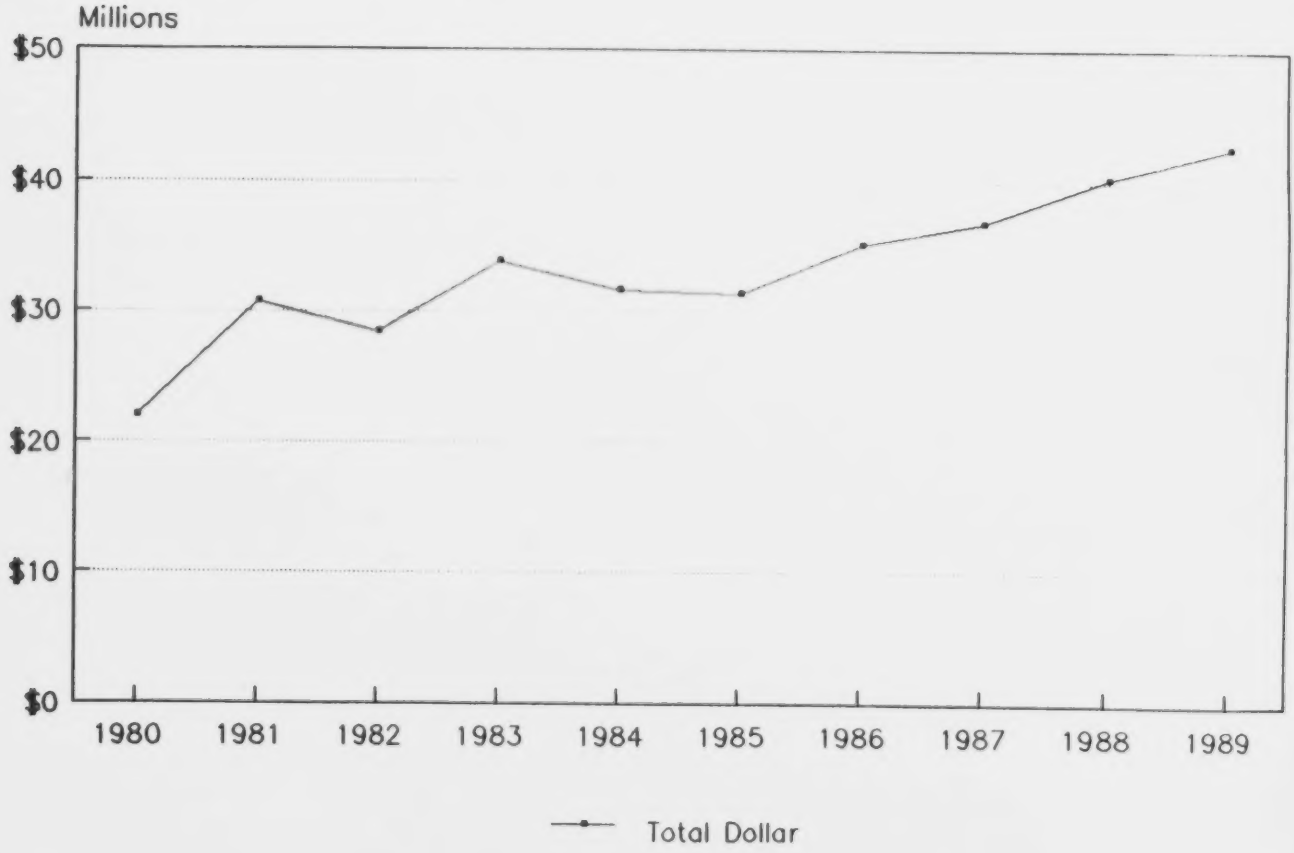


1983 Dollars

FIGURE 6

Academic Admin. & Planning

Adjusted for Inflation

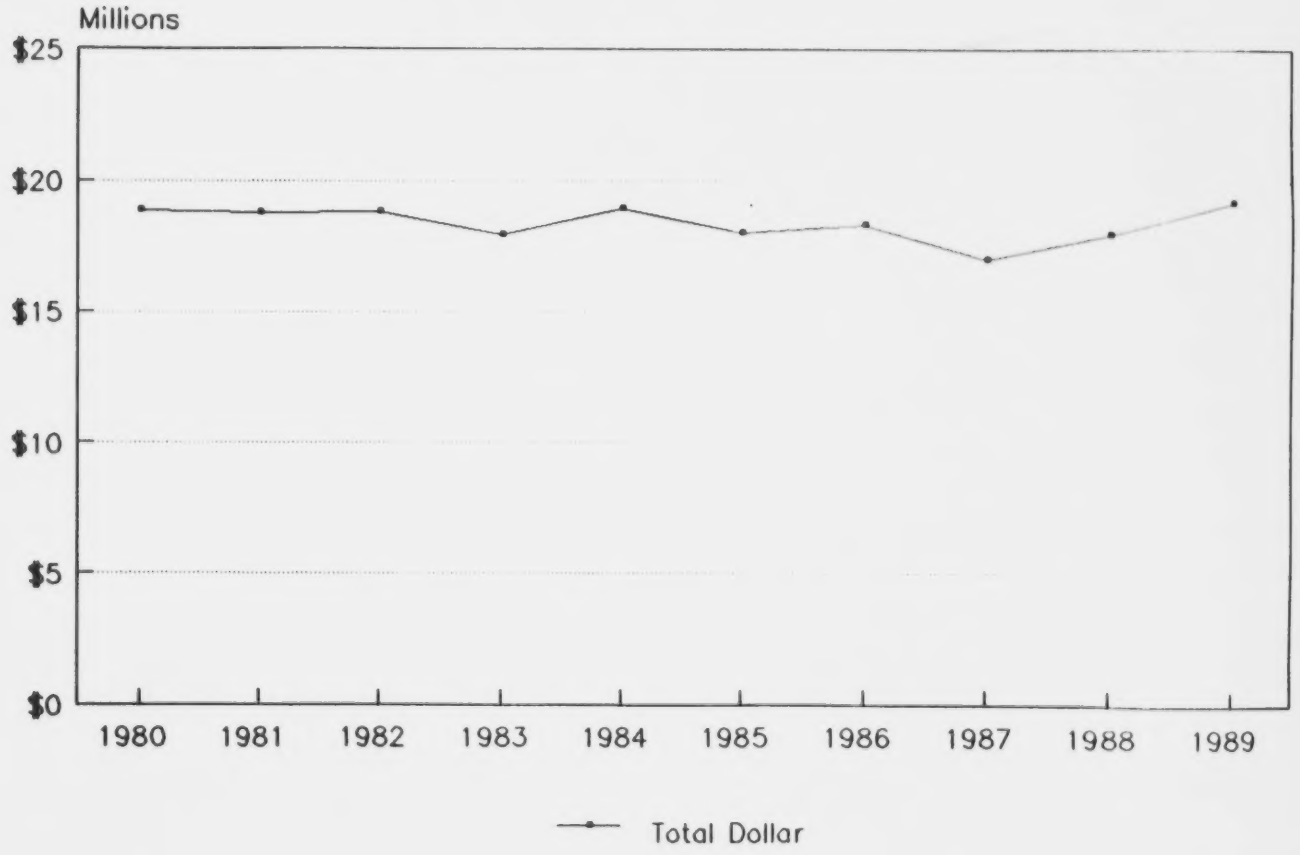


1983 Dollars

FIGURE 7

Learning Resource Costs

Adjusted for Inflation

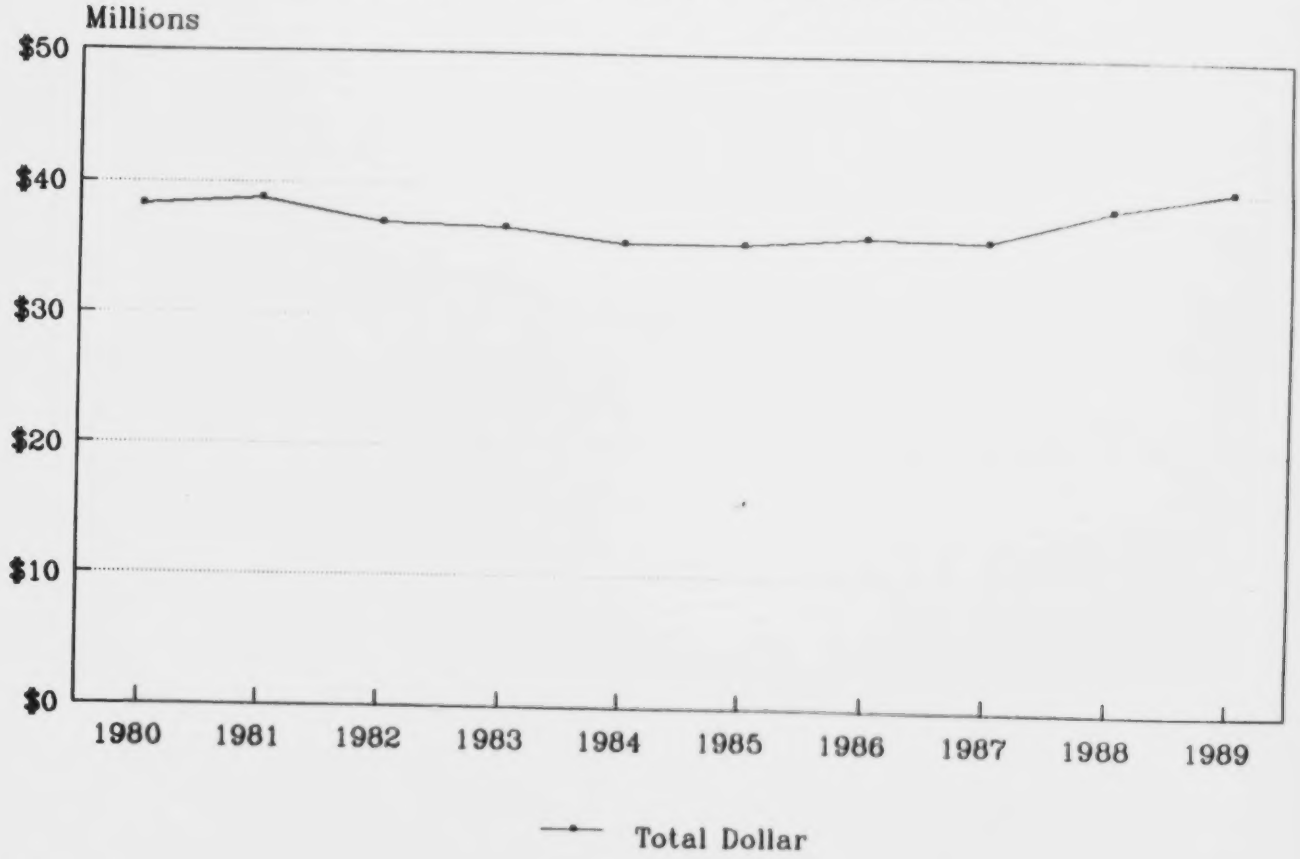


1983 Dollars

FIGURE 8

Student Services Costs

Adjusted for Inflation

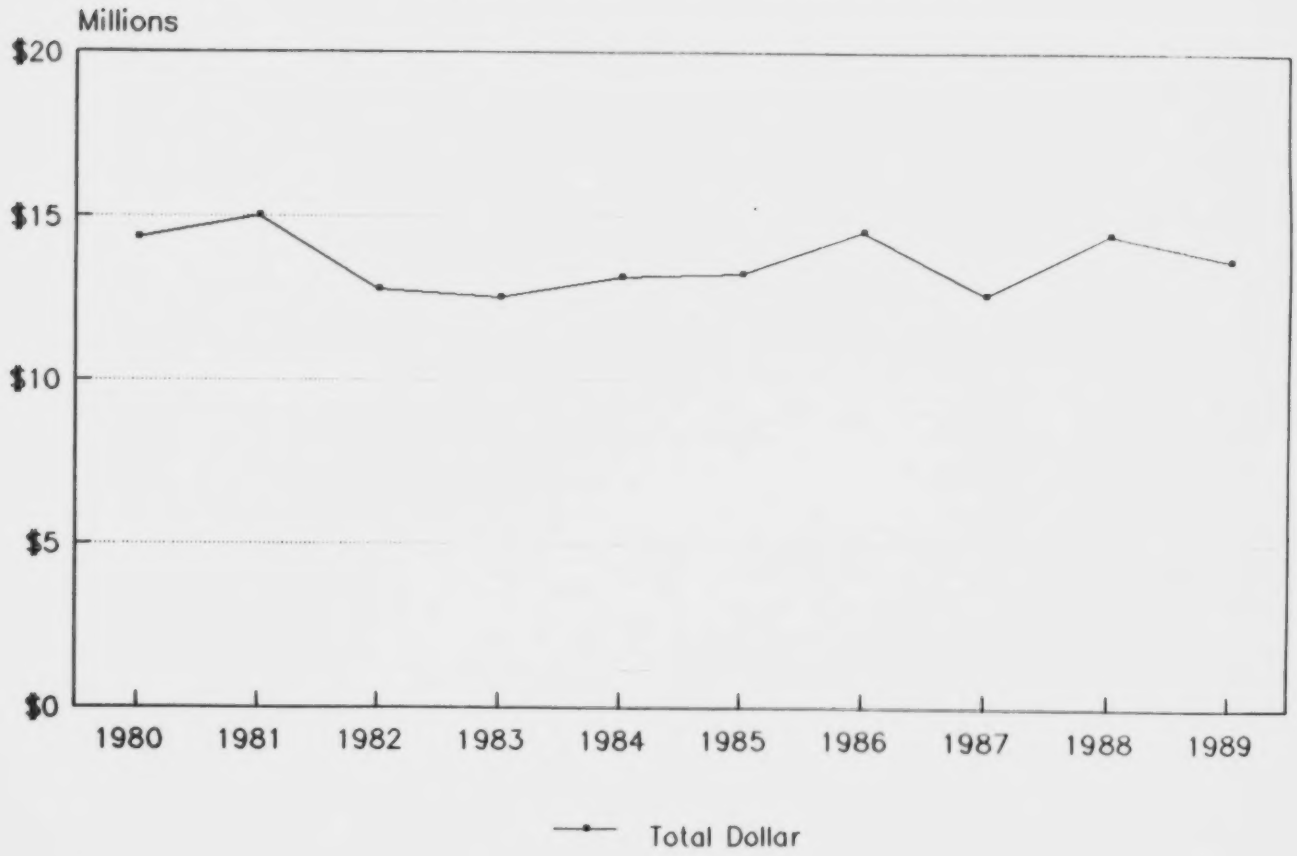


1983 Dollars

FIGURE 9

Admin. Data Processing Costs

Adjusted for Inflation



1983 Dollars

FIGURE 10

General Administration Costs

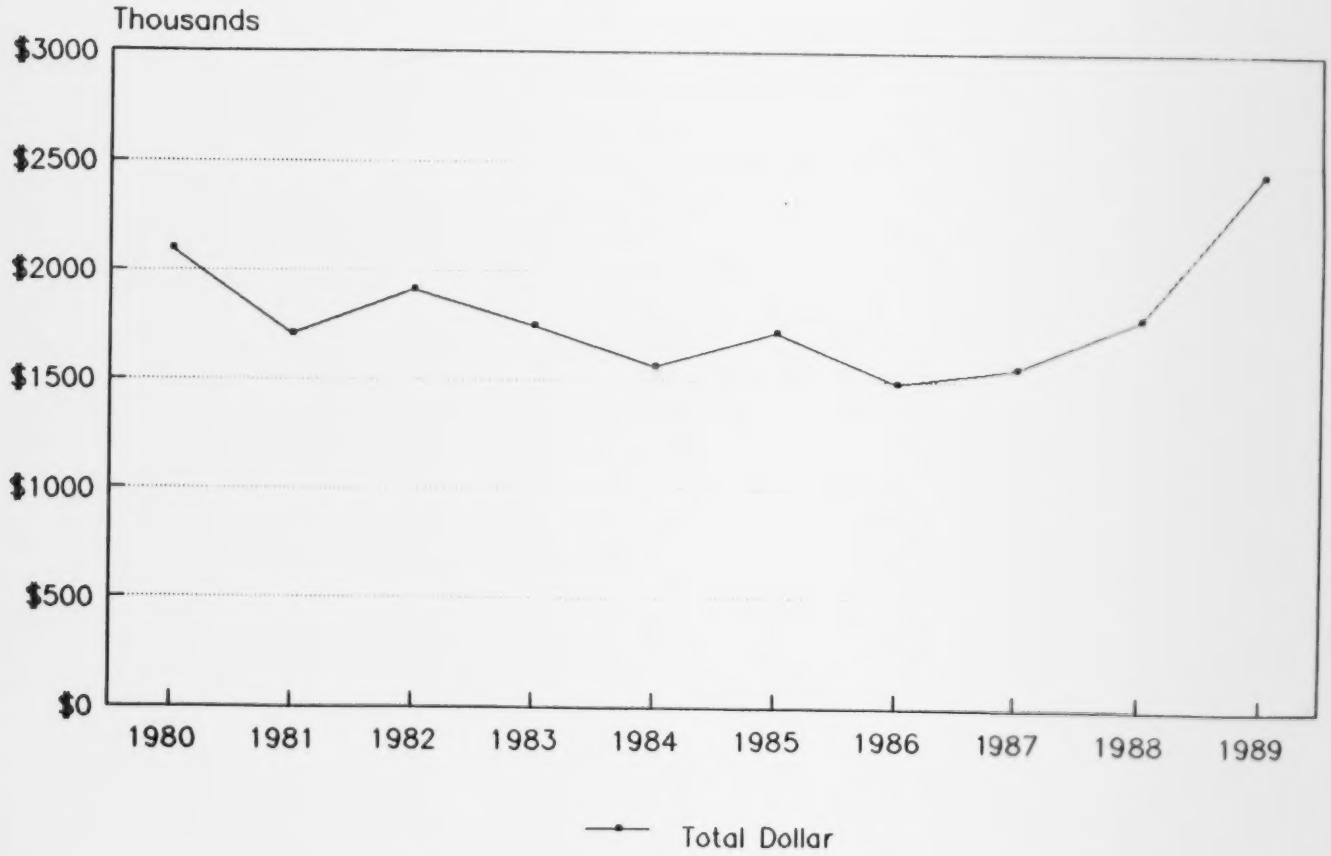
Adjusted for Inflation

1983 Dollars

FIGURE 11

Auxiliary Services Subsidy

Adjusted for Inflation

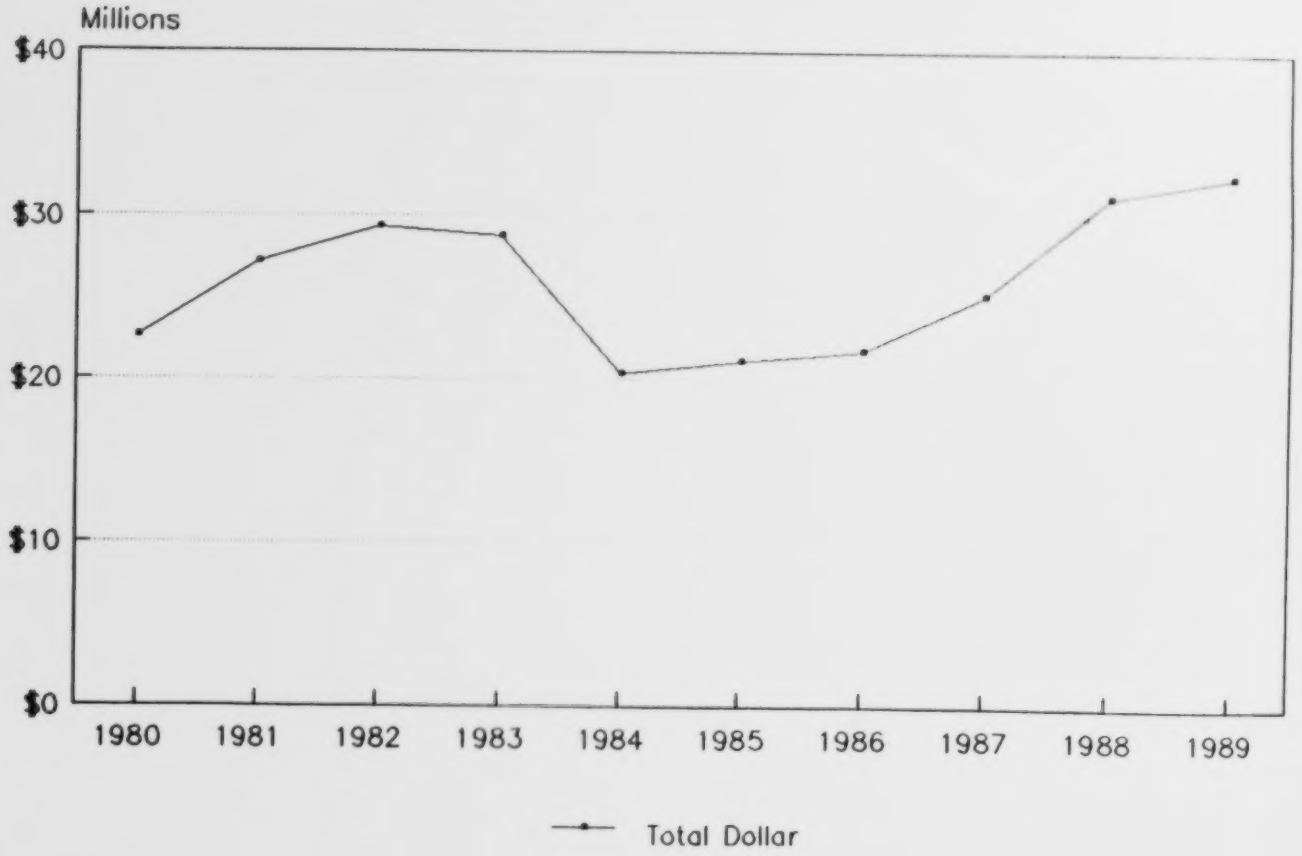


1983 Dollars

FIGURE 12

General Institution Costs

Adjusted for Inflation



1983 Dollars

FIGURE 13

Net Instructional Costs

Adjusted for Inflation

1983 Dollars

FIGURE 14

Other Local Costs

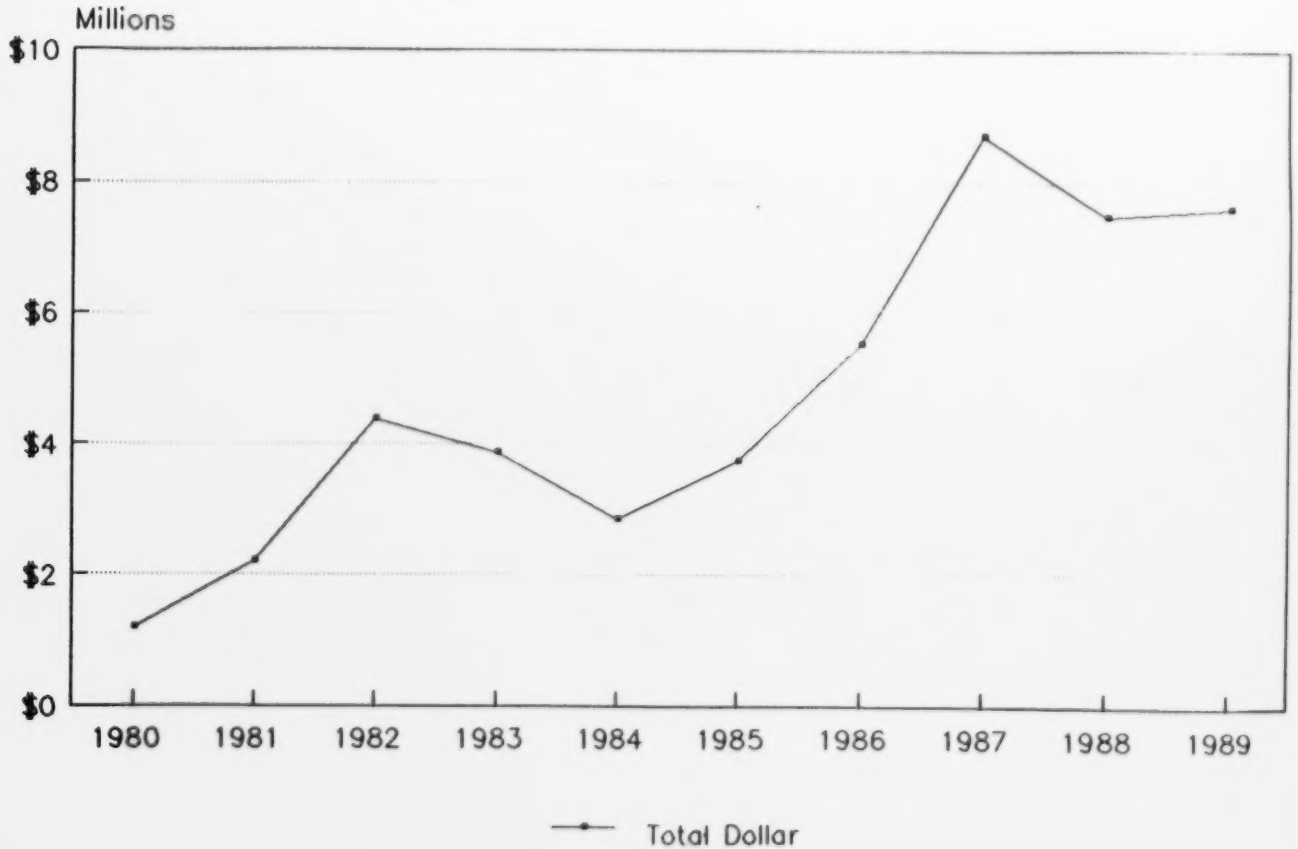
Adjusted for Inflation

1983 Dollars

FIGURE 15

Building Repair Costs

Adjusted for Inflation

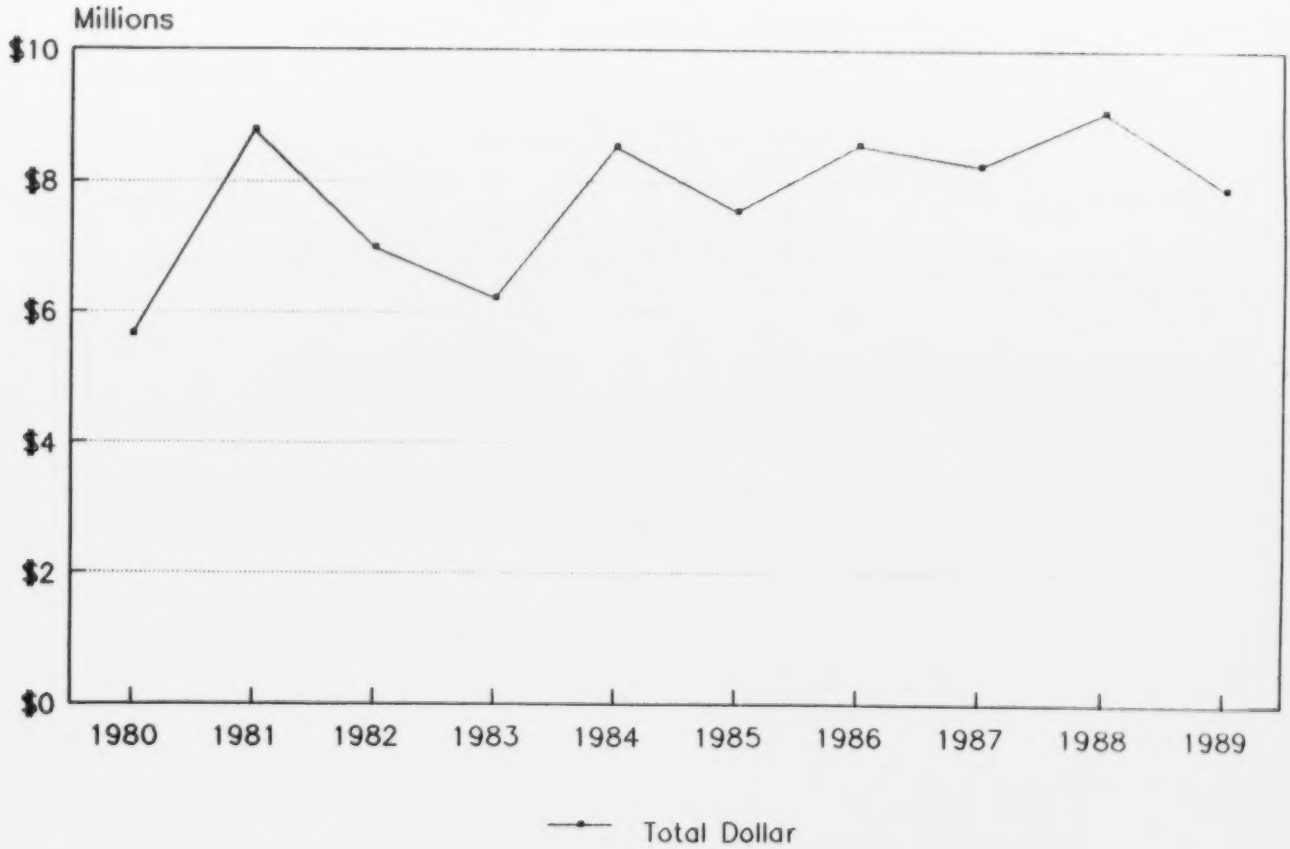


1983 Dollars

FIGURE 16

Building Depreciation Costs

Adjusted for Inflation

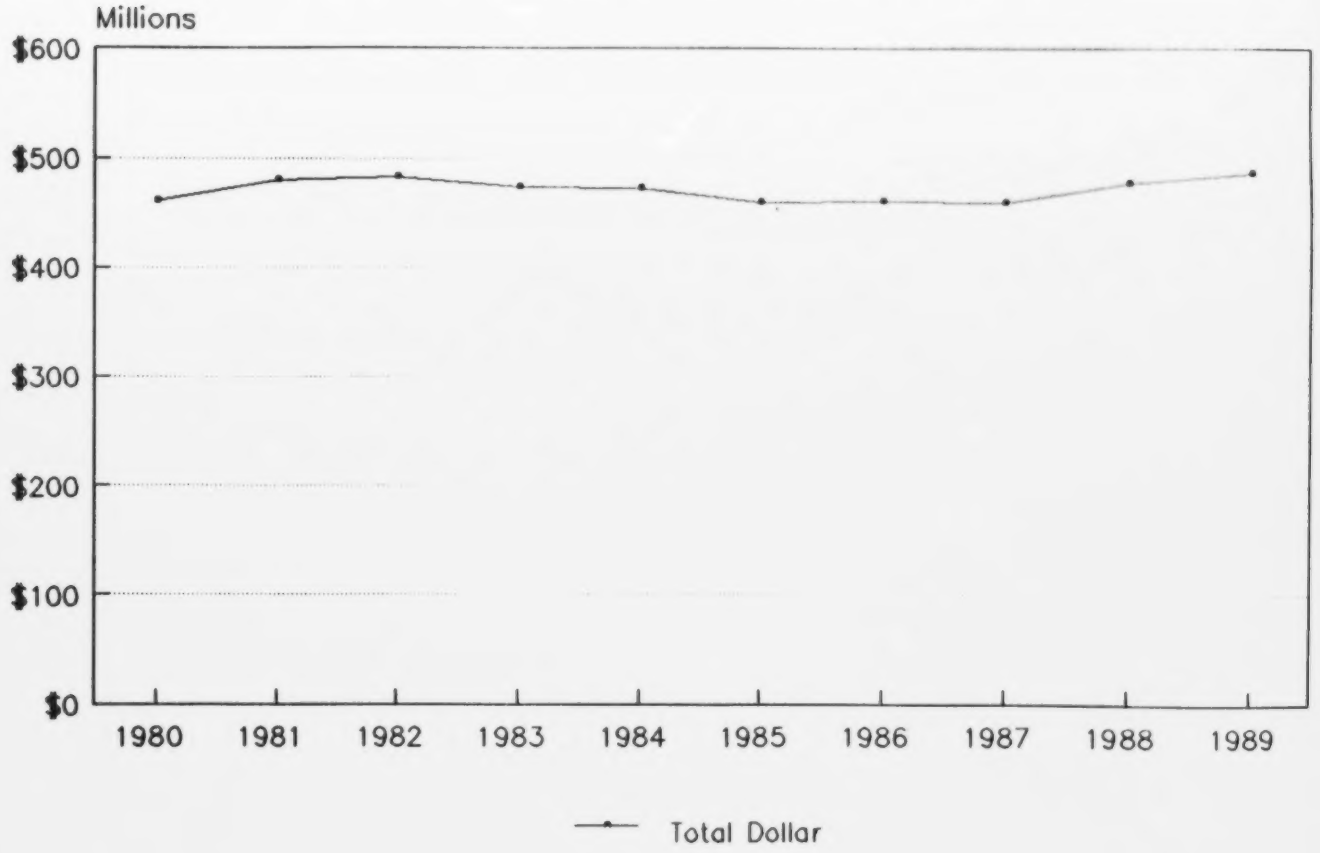


1983 Dollars

FIGURE 17

Full Instructional Costs

Adjusted for Inflation

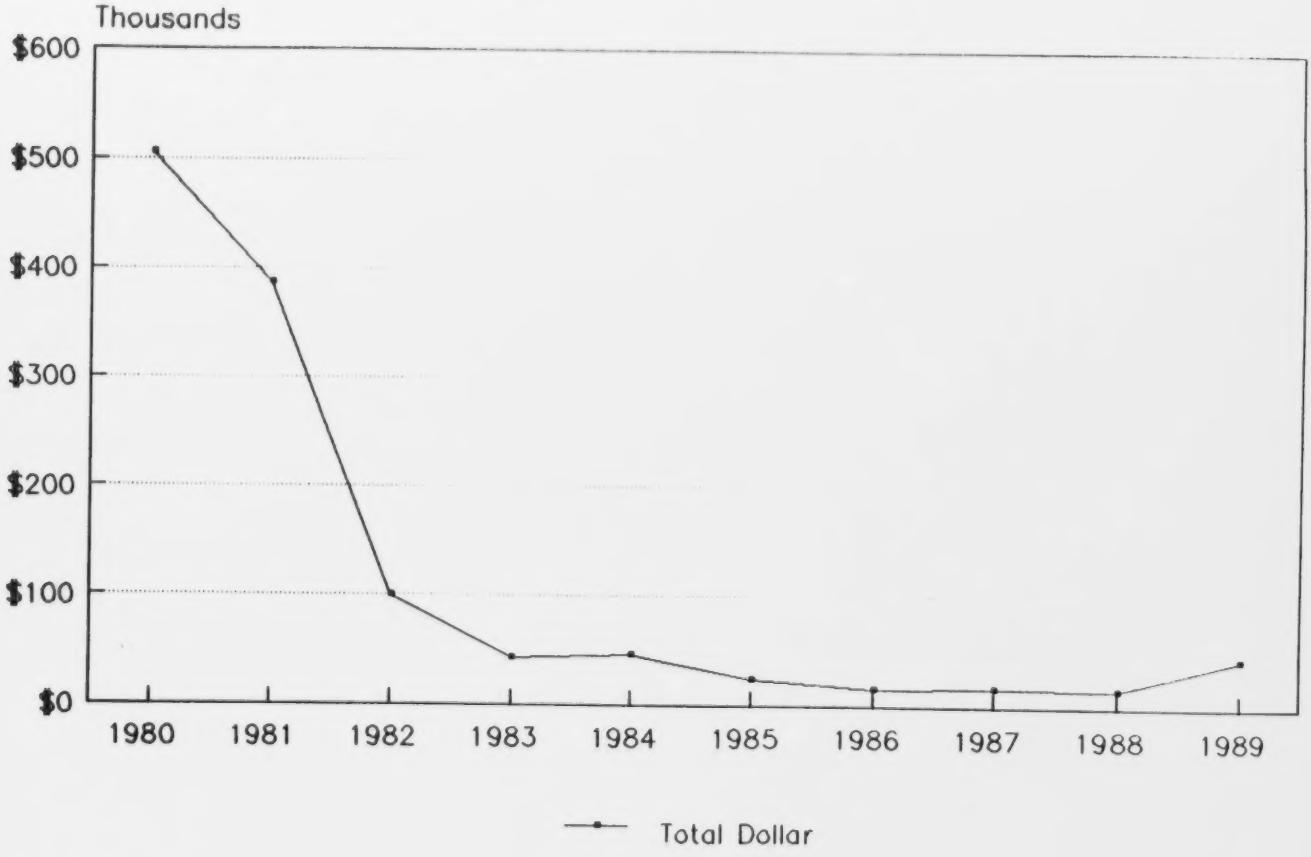


1983 Dollars

FIGURE 18

Organized Research Costs

Adjusted for Inflation

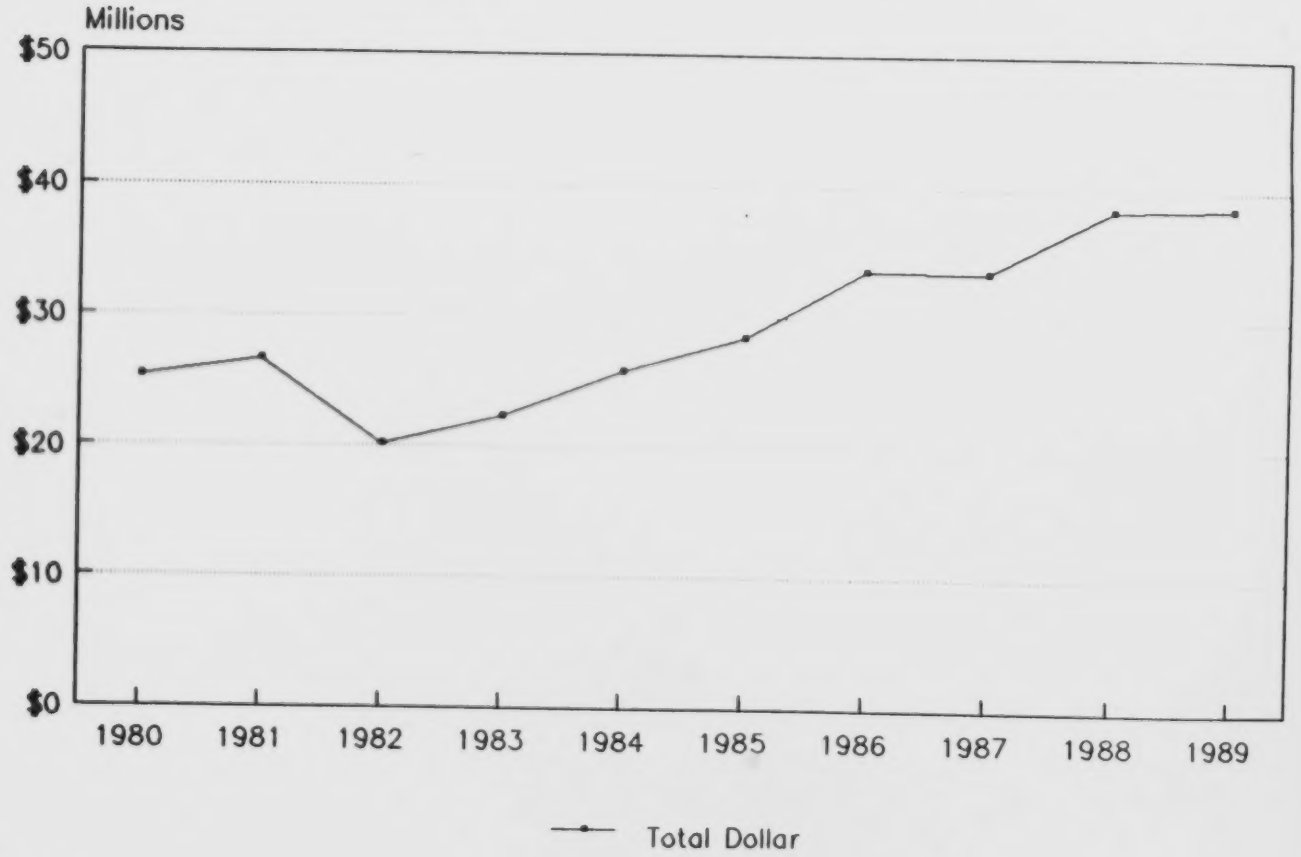


1983 Dollars

FIGURE 19

Public Service Costs

Adjusted for Inflation

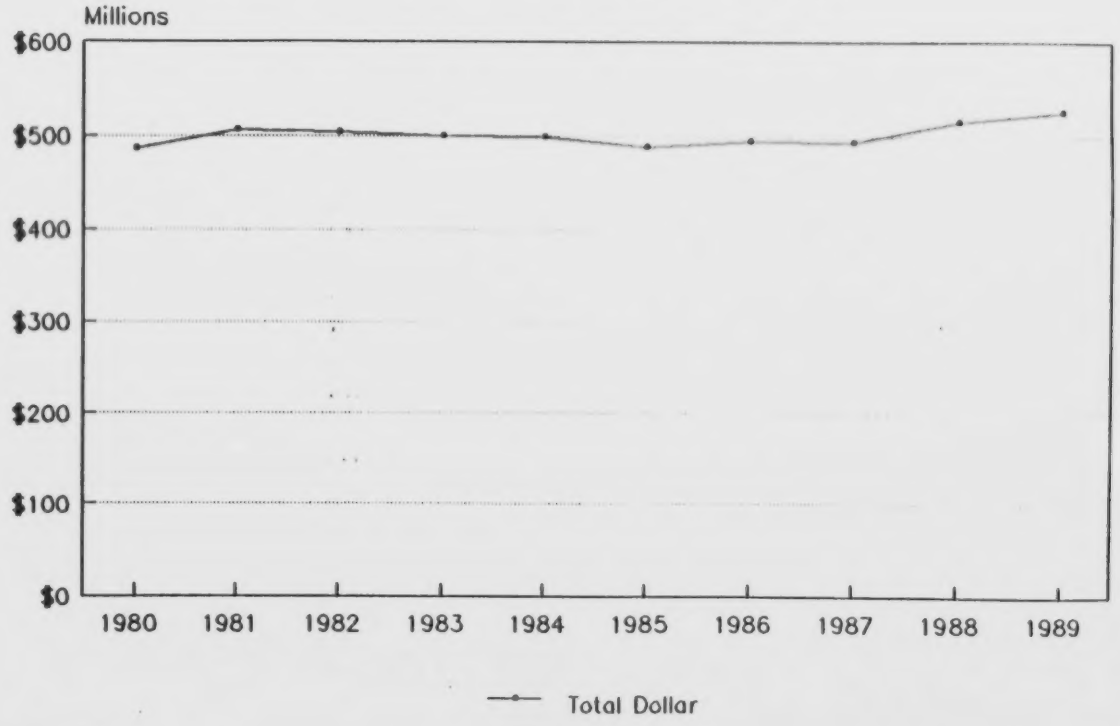


1983 Dollars

FIGURE 20

Total Institutional Costs

Adjusted for Inflation



1983 Dollars

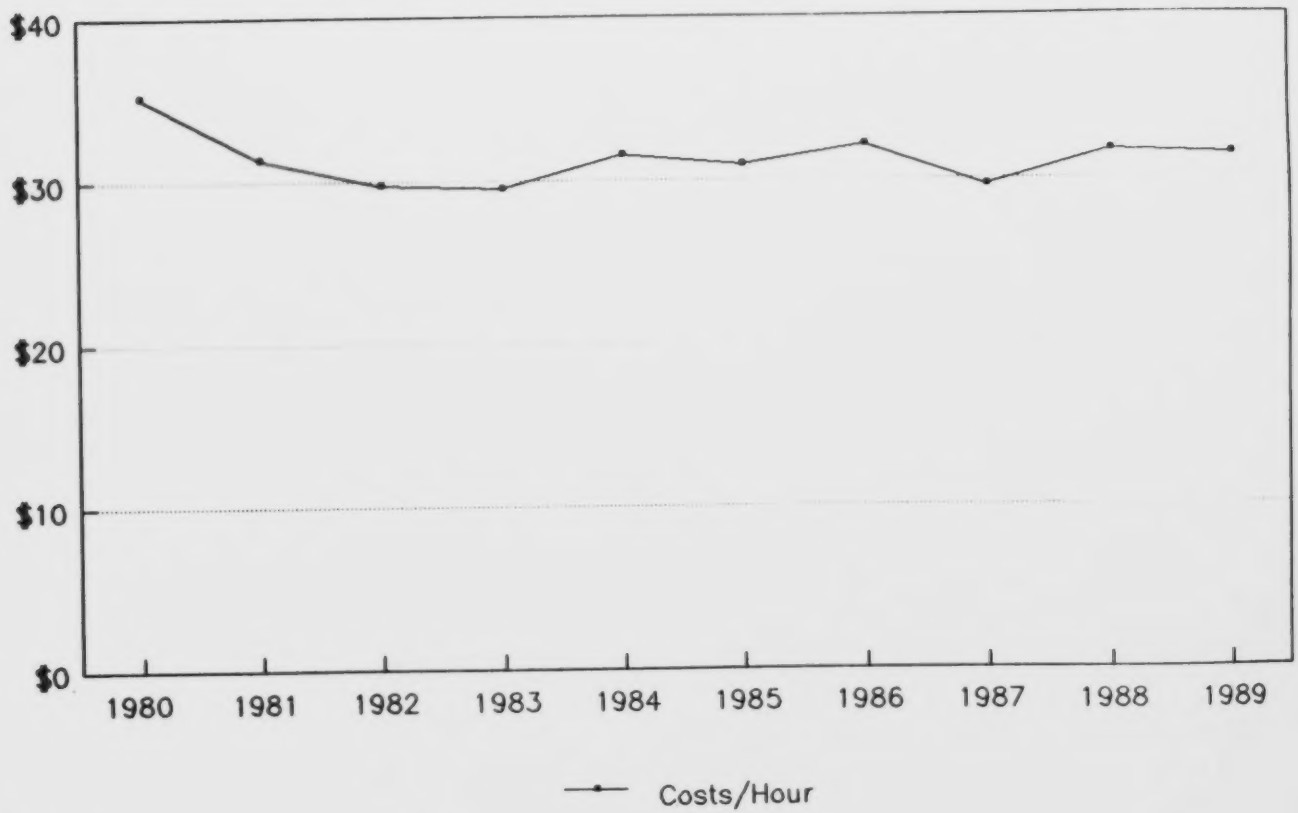
Table 2

Unit Cost Expenditures Per Credit Hour
Adjusted for Inflation
FY 1980 - 1989

Cost	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Salary Costs	35.20	31.37	29.71	29.54	31.55	30.91	32.15	29.57	31.69	31.43
Department Costs	7.34	6.29	5.72	5.67	6.43	6.60	5.92	5.64	6.00	6.30
Equipment Costs	0.98	0.83	0.98	0.81	1.23	0.99	0.98	0.90	0.87	0.85
Academic Admin. & Planning	4.19	5.13	4.32	5.12	5.23	5.39	6.28	6.50	7.25	7.50
Learning Resources	3.60	3.13	2.87	2.71	3.13	3.10	3.28	3.01	3.24	3.38
Student Services	7.31	6.47	5.63	5.55	5.88	6.12	6.47	6.37	6.95	7.05
Admin Data Processing	2.74	2.51	1.94	1.89	2.17	2.28	2.60	2.23	2.61	2.42
General Administration	5.61	4.67	4.14	4.03	4.48	4.89	5.12	4.96	5.47	5.63
General Institutional	4.32	4.53	4.47	4.34	3.36	3.63	3.88	4.45	5.63	5.71
Net Instructional Unit Cost	85.12	76.68	70.60	69.77	75.18	75.87	78.98	77.30	82.16	82.30
Total Institutional Unit Cost	92.92	84.58	76.66	75.52	82.31	83.90	88.41	87.07	92.99	92.60

FIGURE 21

Salary Costs
Per Credit Hour

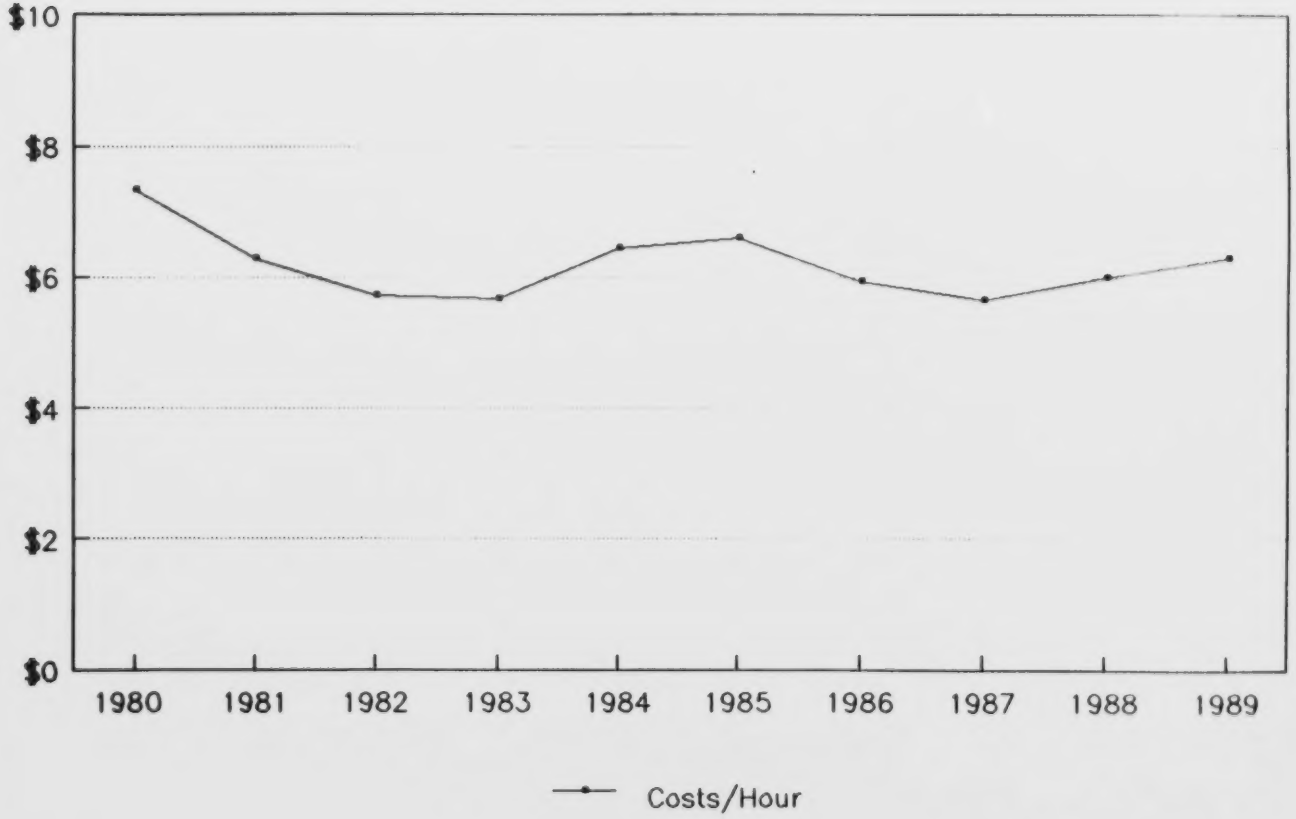


(1983 Dollars)

FIGURE 22

Department Costs

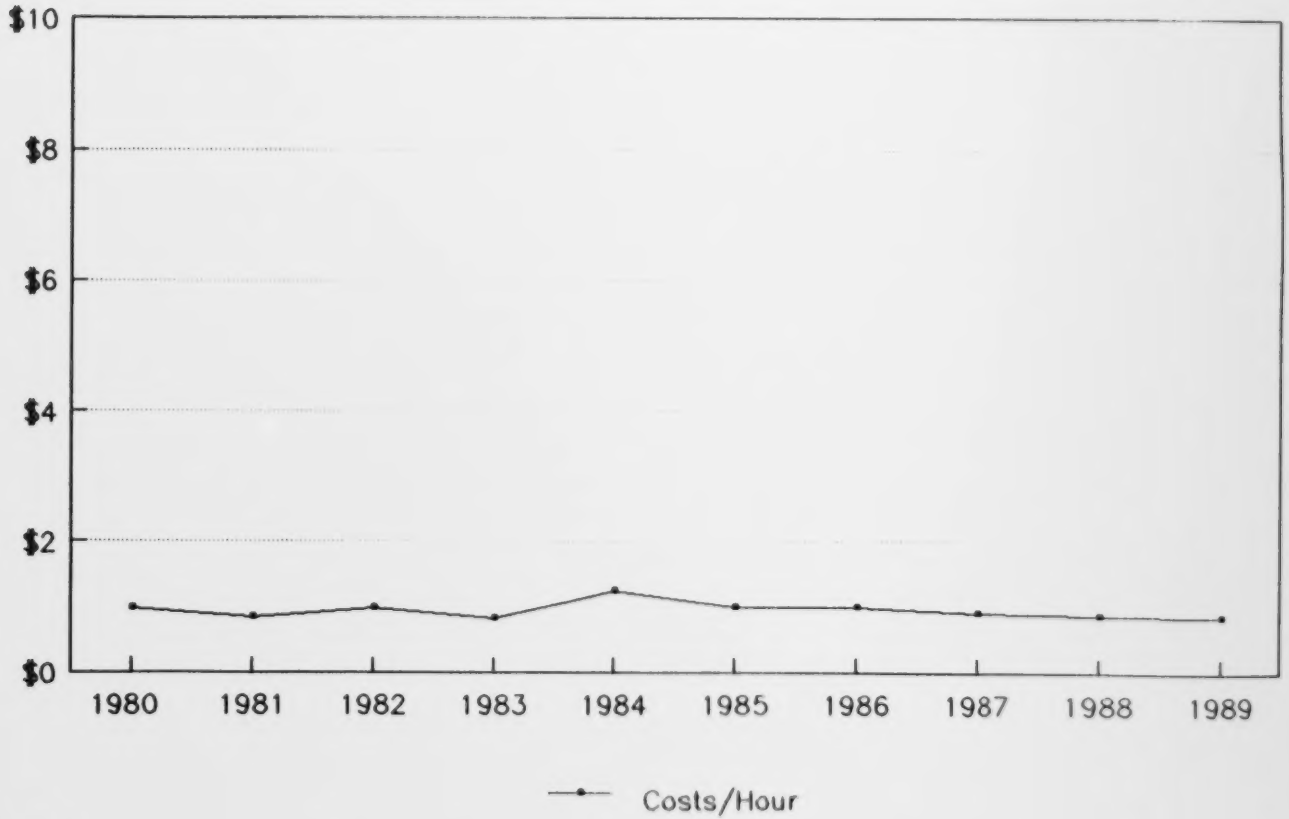
Per Credit Hour



(1983 Dollars)

FIGURE 23

Equipment Costs
Per Credit Hour

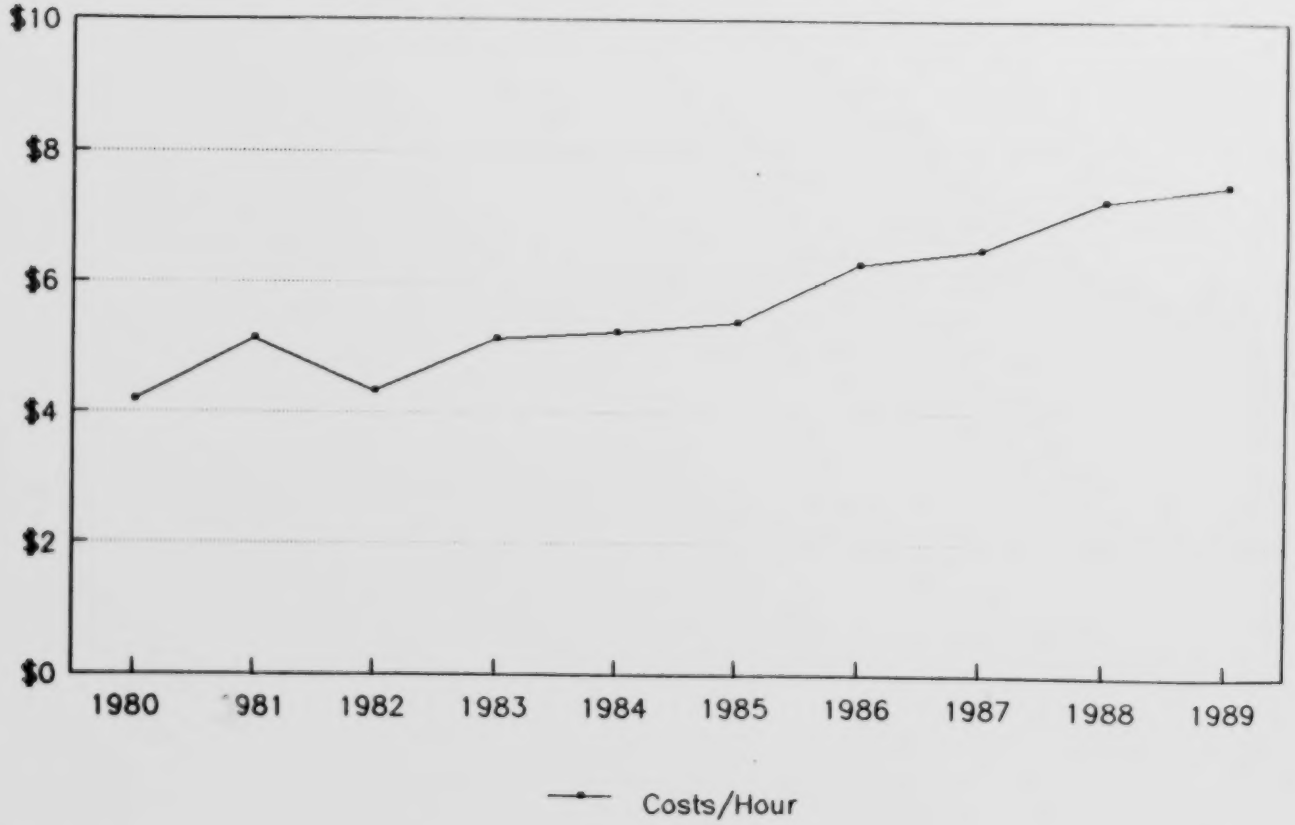


(1983 Dollars)

FIGURE 24

Academic Admin. & Planning

Per Credit Hour

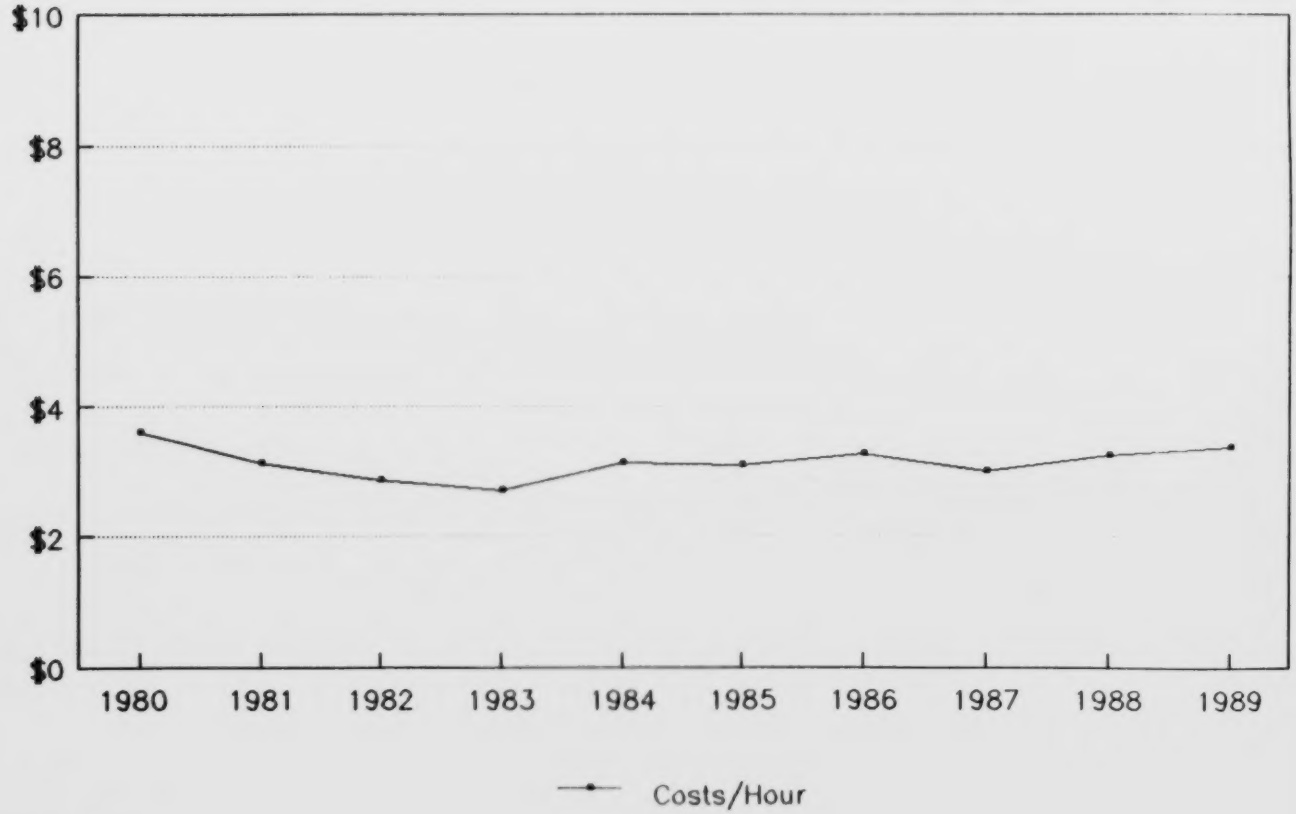


(1983 Dollars)

FIGURE 25

Learning Resource Cost

Per Credit Hour

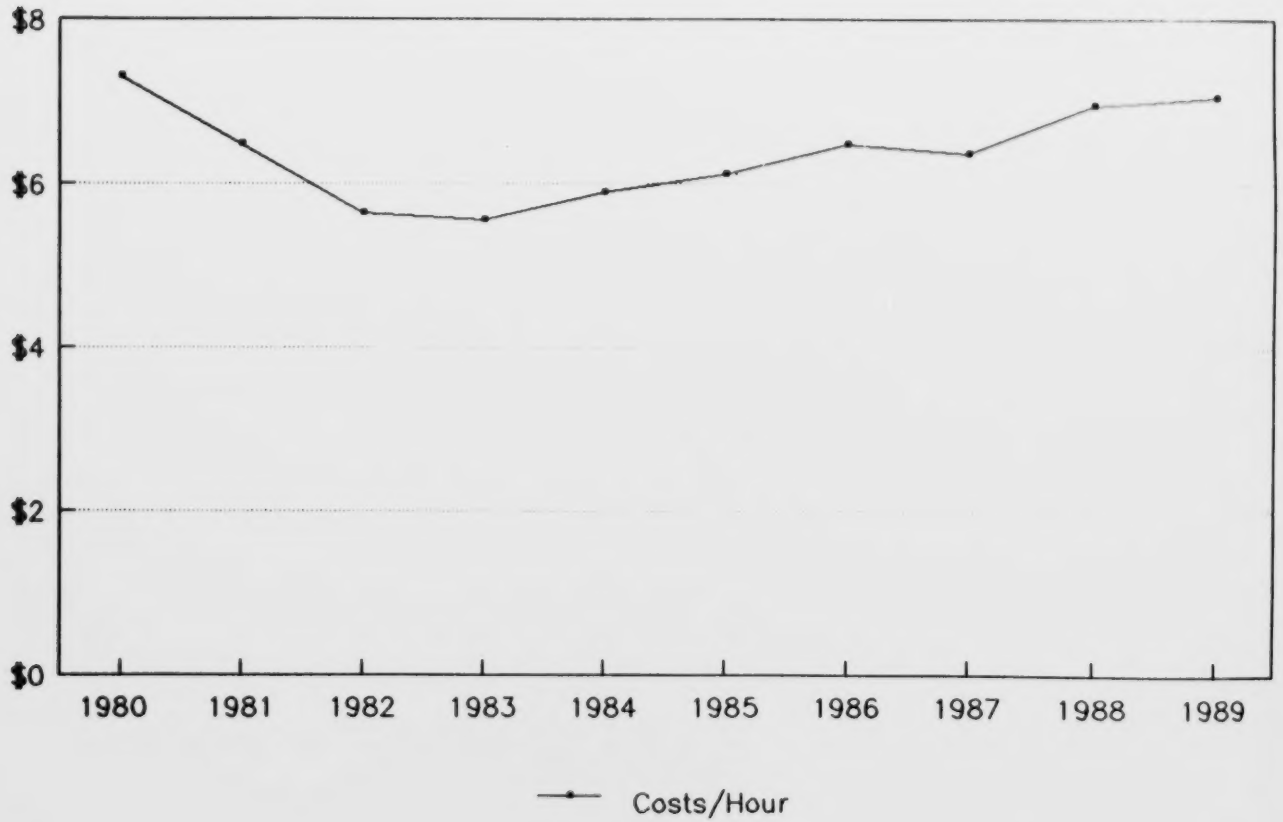


(1983 Dollars)

FIGURE 26

Student Services Cost

Per Credit Hour

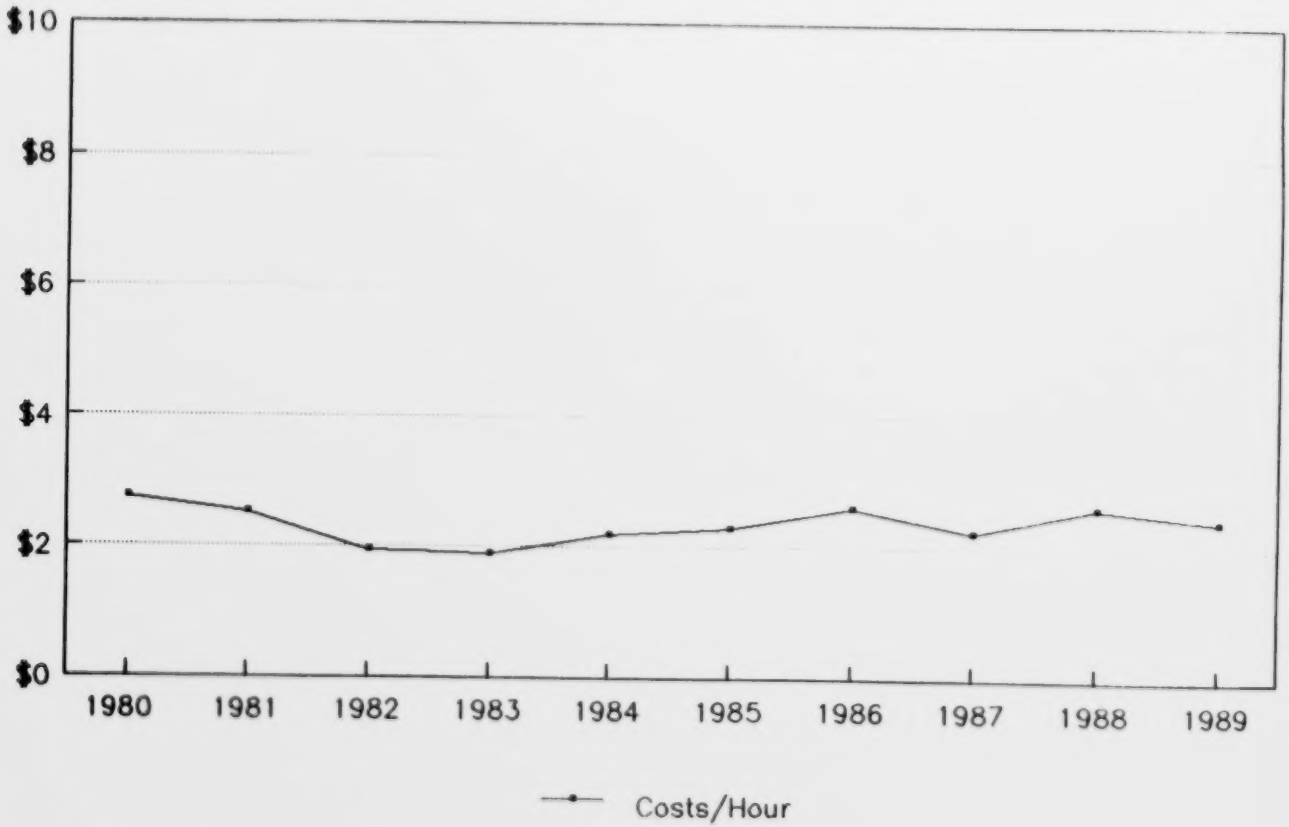


(1983 Dollars)

FIGURE 27

Administrative Data Processing

Per Credit Hour



(1983 Dollars)

FIGURE 28

General Administration Costs

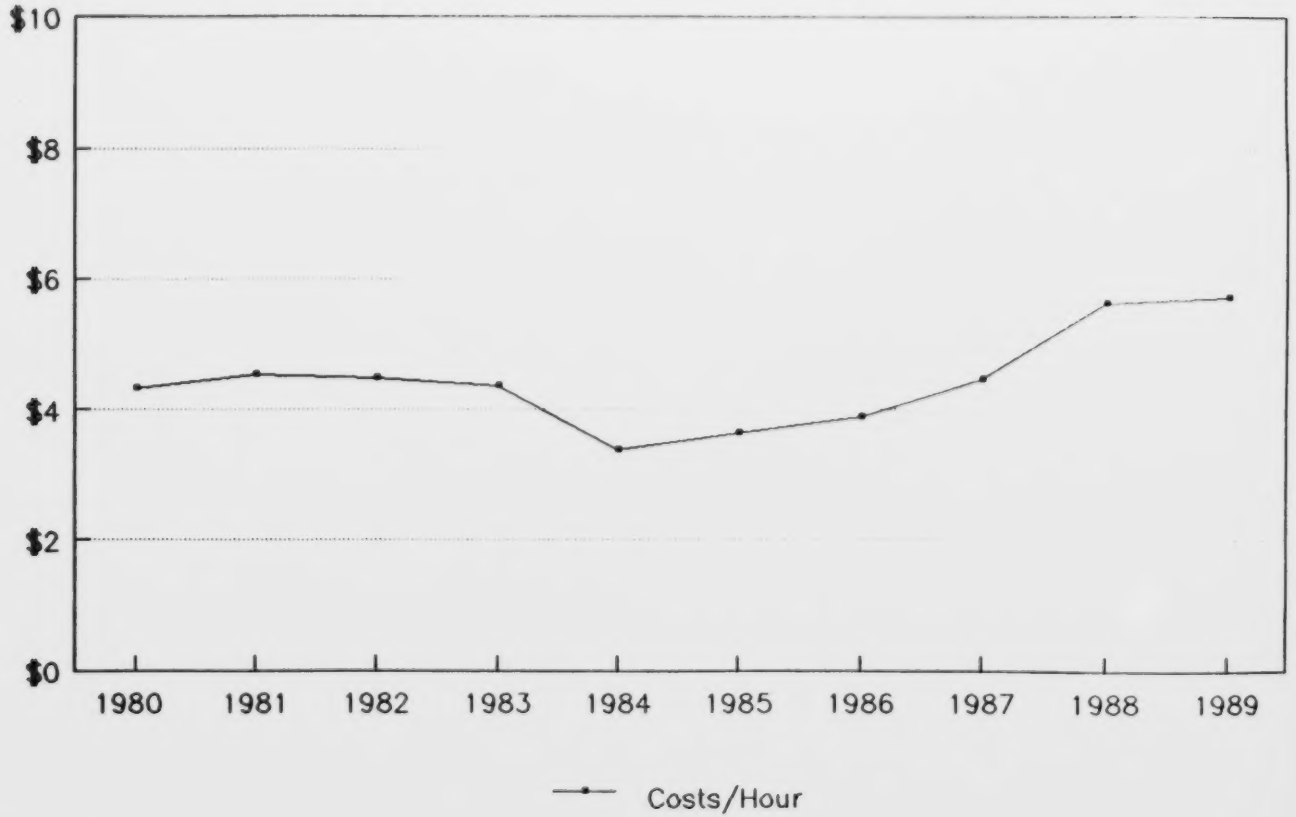
Per Credit Hour

(1983 Dollars)

FIGURE 29

General Institutional Costs

Per Credit Hour

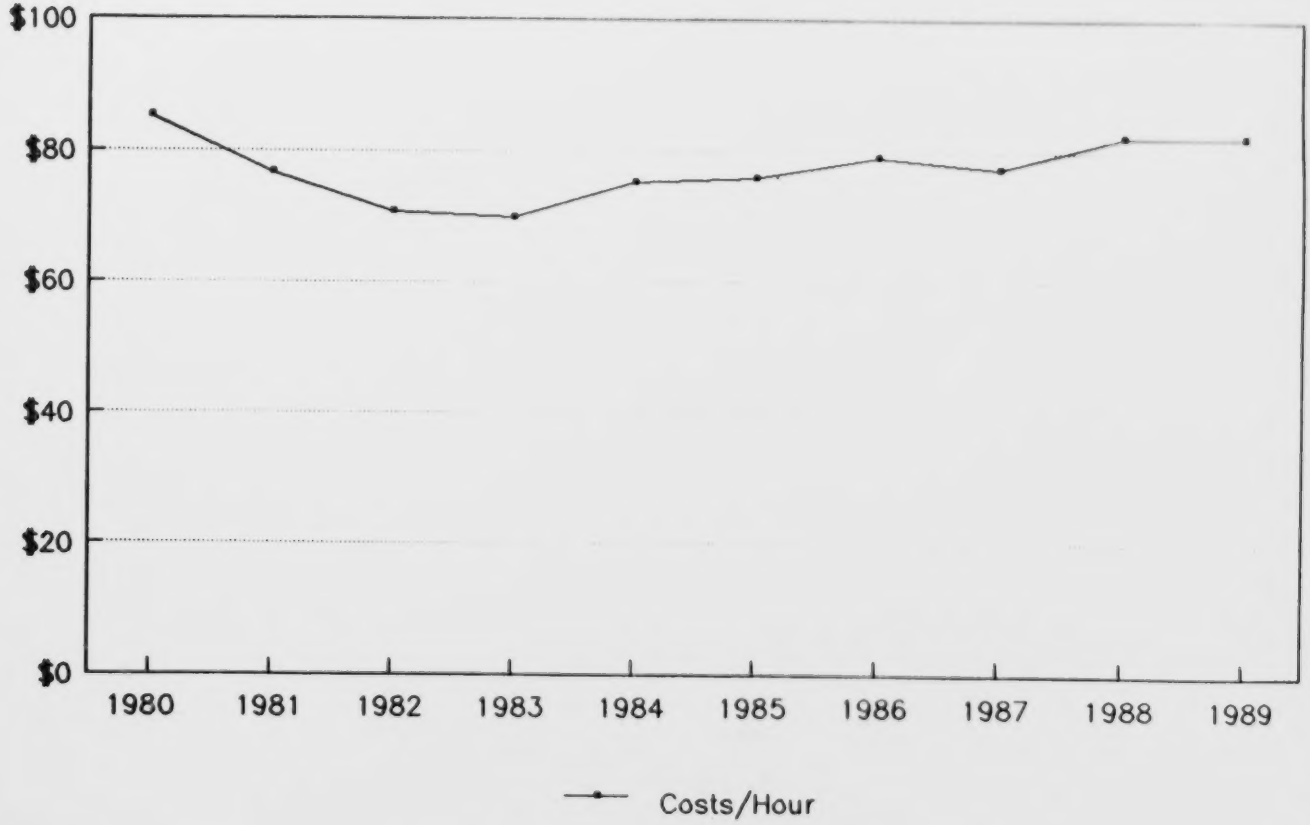


(1983 Dollars)

FIGURE 30

Net Instructional Unit Cost

Per Credit Hour

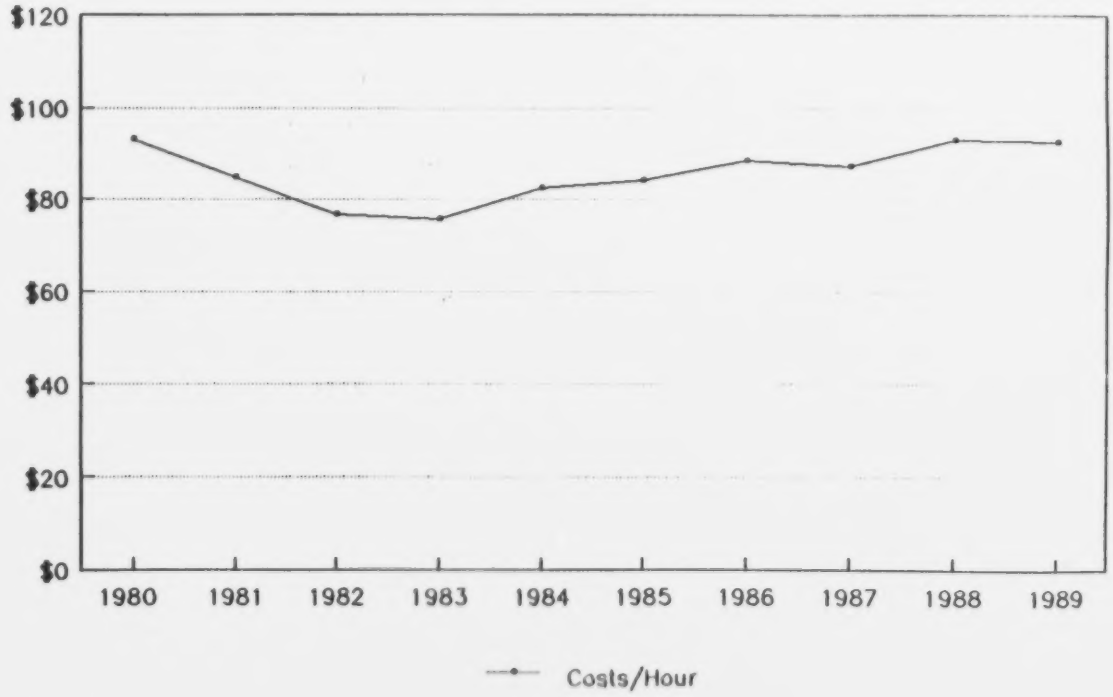


(1983 Dollars)

FIGURE 31

Total Institutional Costs

Per Credit Hour



(1983 Dollars)

Table 3

Reimbursable Semester Credit Hours
by Funding Category

Fiscal Year	Bacc	Business	Technical	Health	Remedial	ABE/ASE	General Studies	Total
1980	2198825	701514	691900	252464	98674	899376	328767	5171520
1981	2430365	770246	796973	298116	127052	1089449	382225	5894426
1982	2596751	763416	885841	327339	149457	1288765	449163	6460732
1983	2684479	768215	968242	352606	161562	1186629	395049	6516782
1984	2821846	554033	850594	286351	221033	923191	307390	5964438
1985	2622248	537734	763121	272132	222744	917076	382211	5717266
1986	2509290	516983	700194	249923	222370	996806	255044	5450610
1987	2531311	498114	667418	231846	221447	1147898	211821	5509855
1988	2575500	455497	632862	224037	217613	1114418	180101	5400028
1989	2683399	445664	638557	231123	236002	1170235	85264	5490244

FIGURE 32

Baccalaureate Credit Hours

FY 1980 – 1989

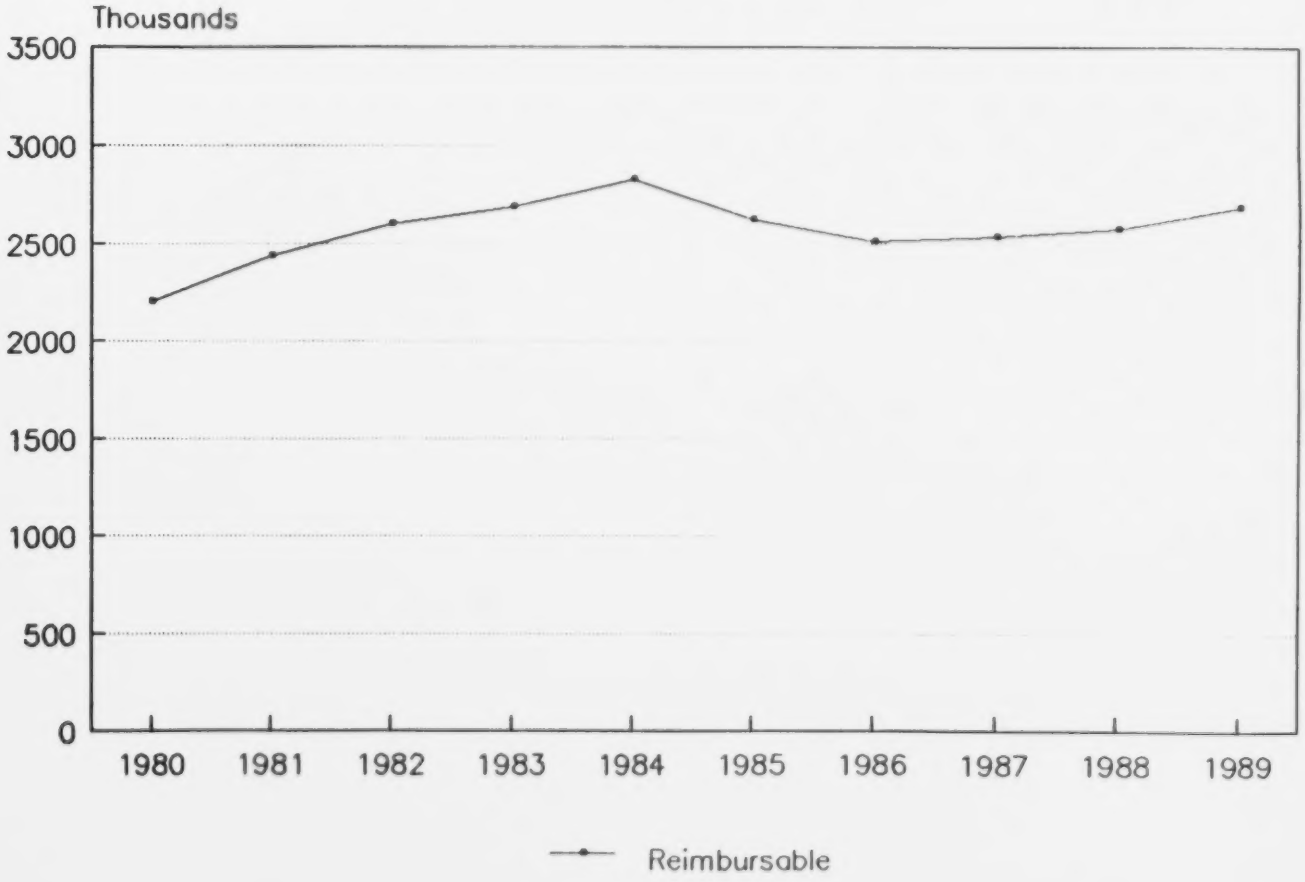


FIGURE 33

Business Credit Hours

FY 1980 – 1990

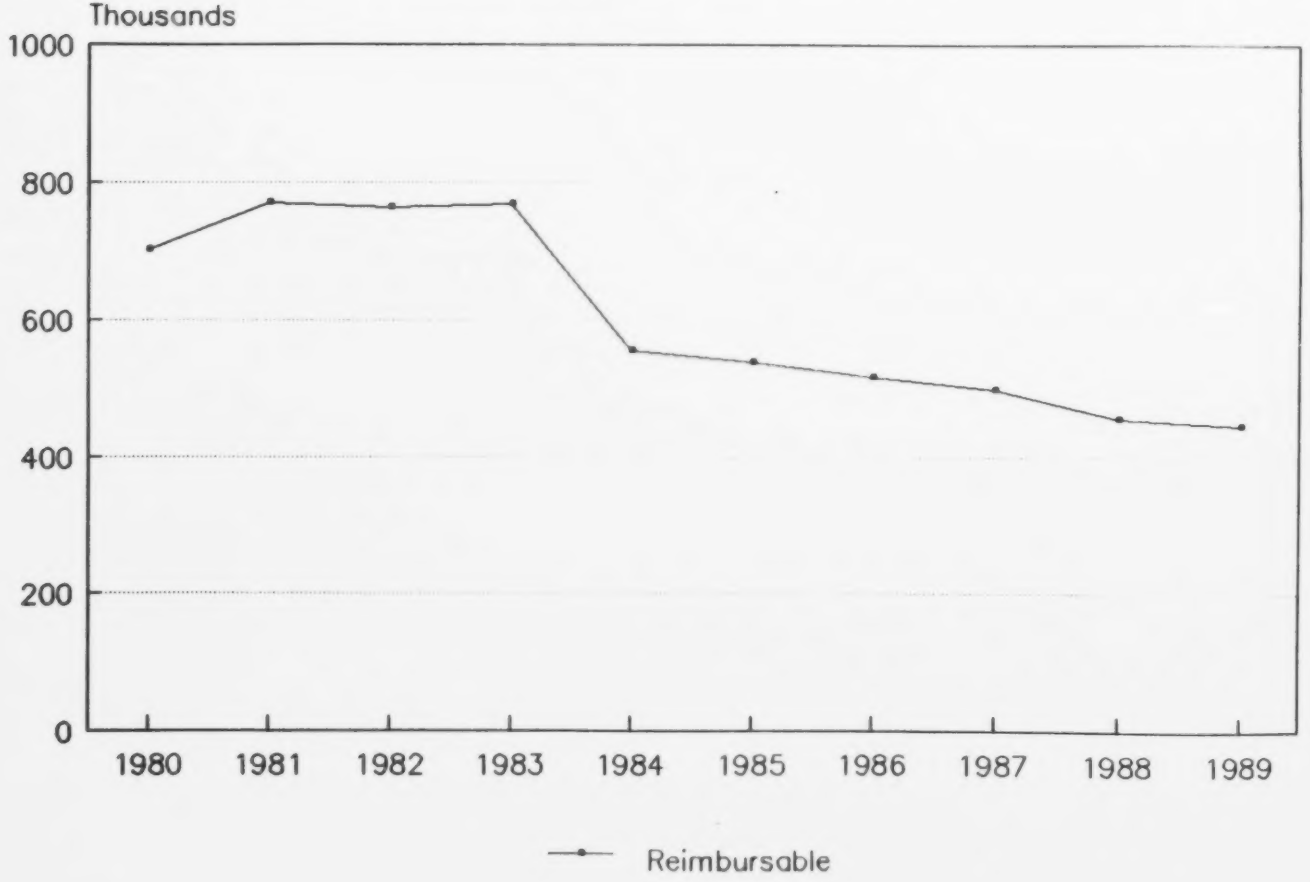


FIGURE 34

Technical Credit Hours

FY 1980 – 1990

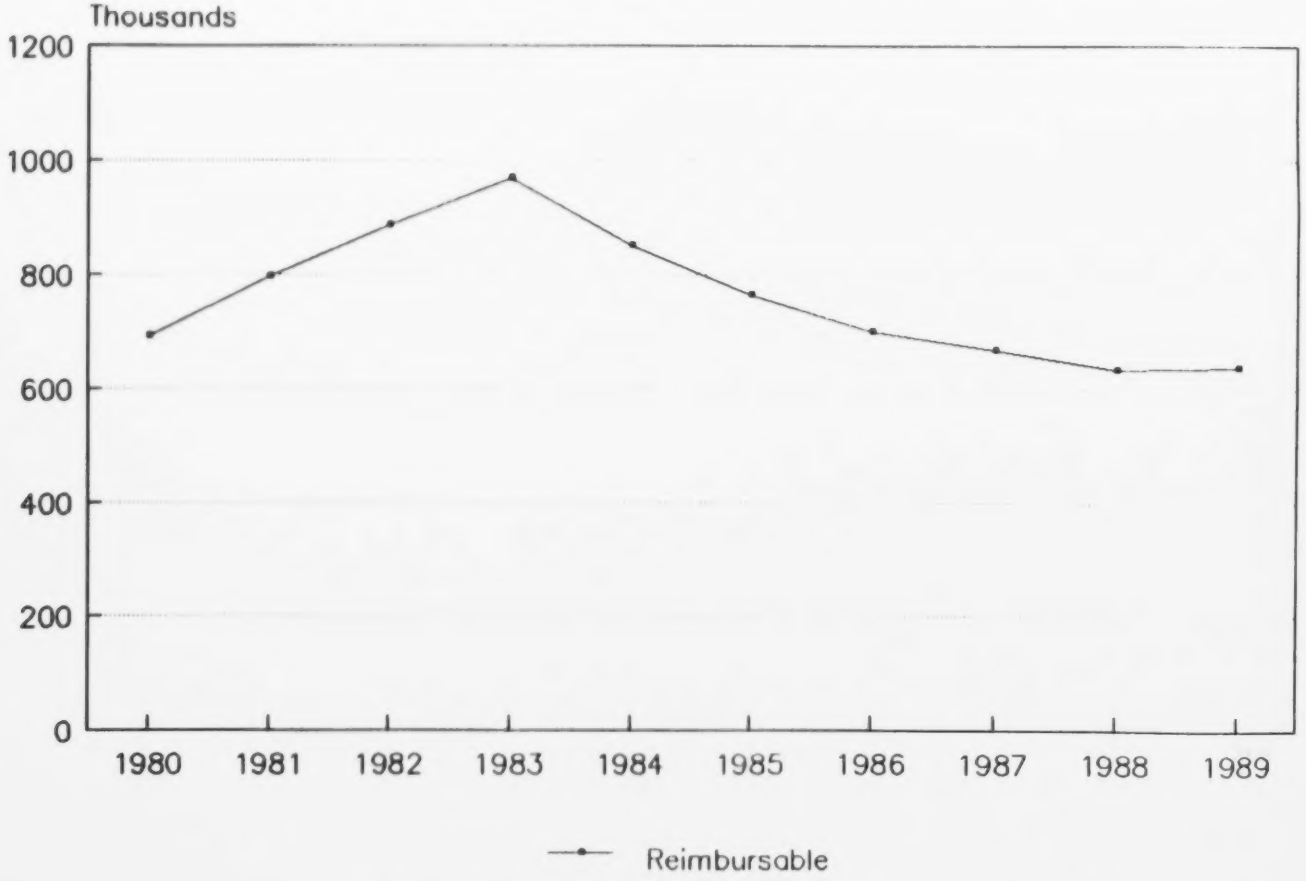


FIGURE 35

Health Credit Hours

FY 1980 – 1990

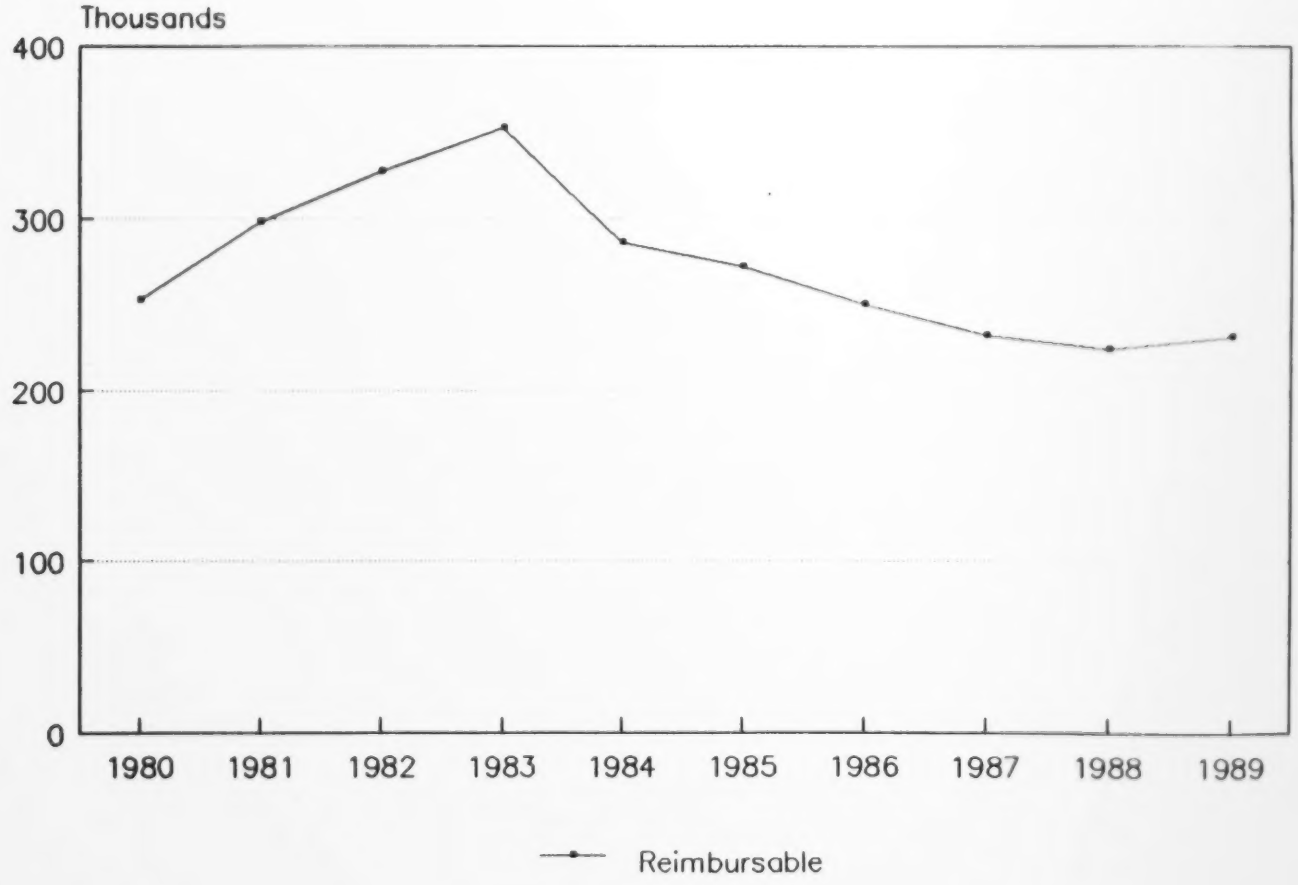


FIGURE 36

Remedial Credit Hours

FY 1980 – 1990

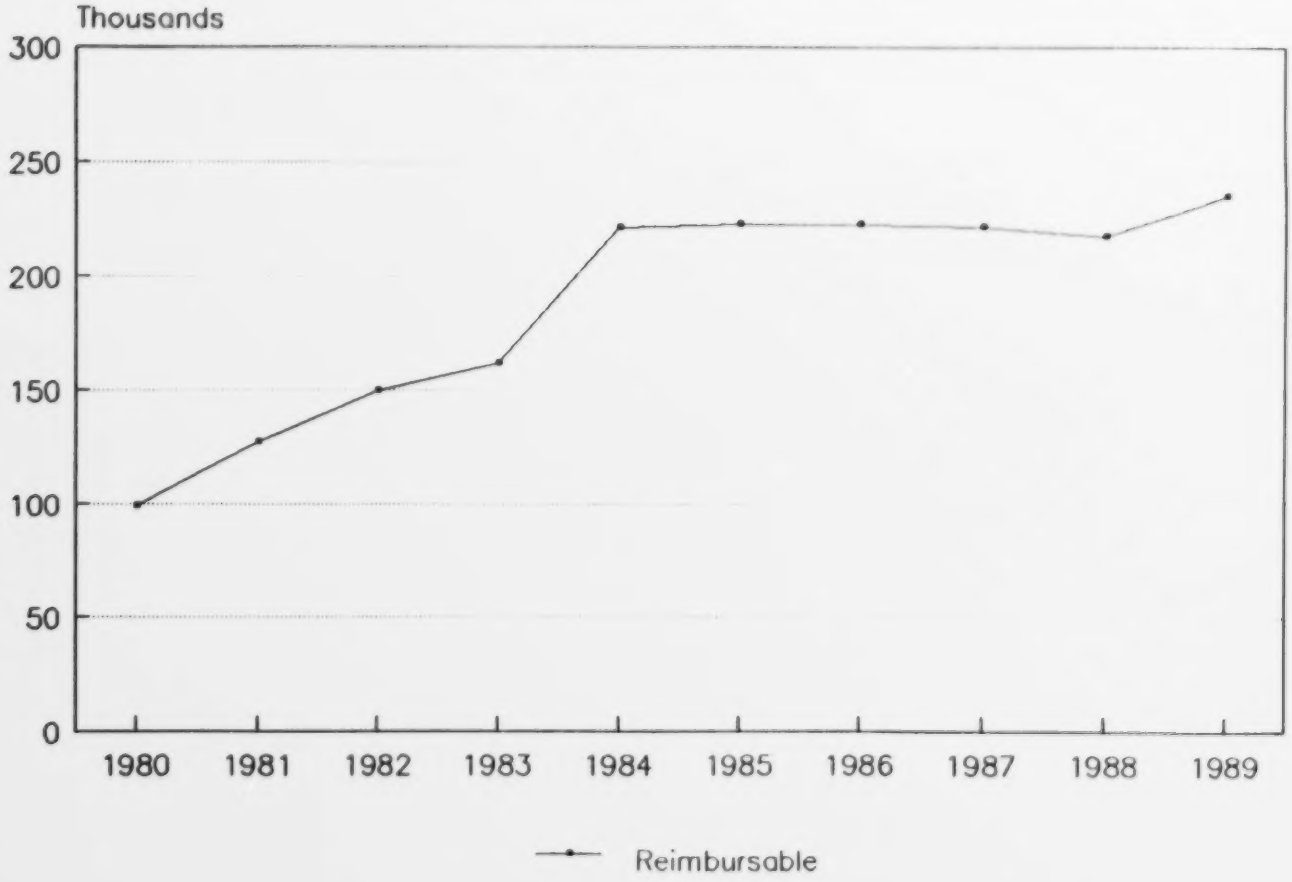


FIGURE 37

ABE/ASE Credit Hours

FY 1980 - 1990

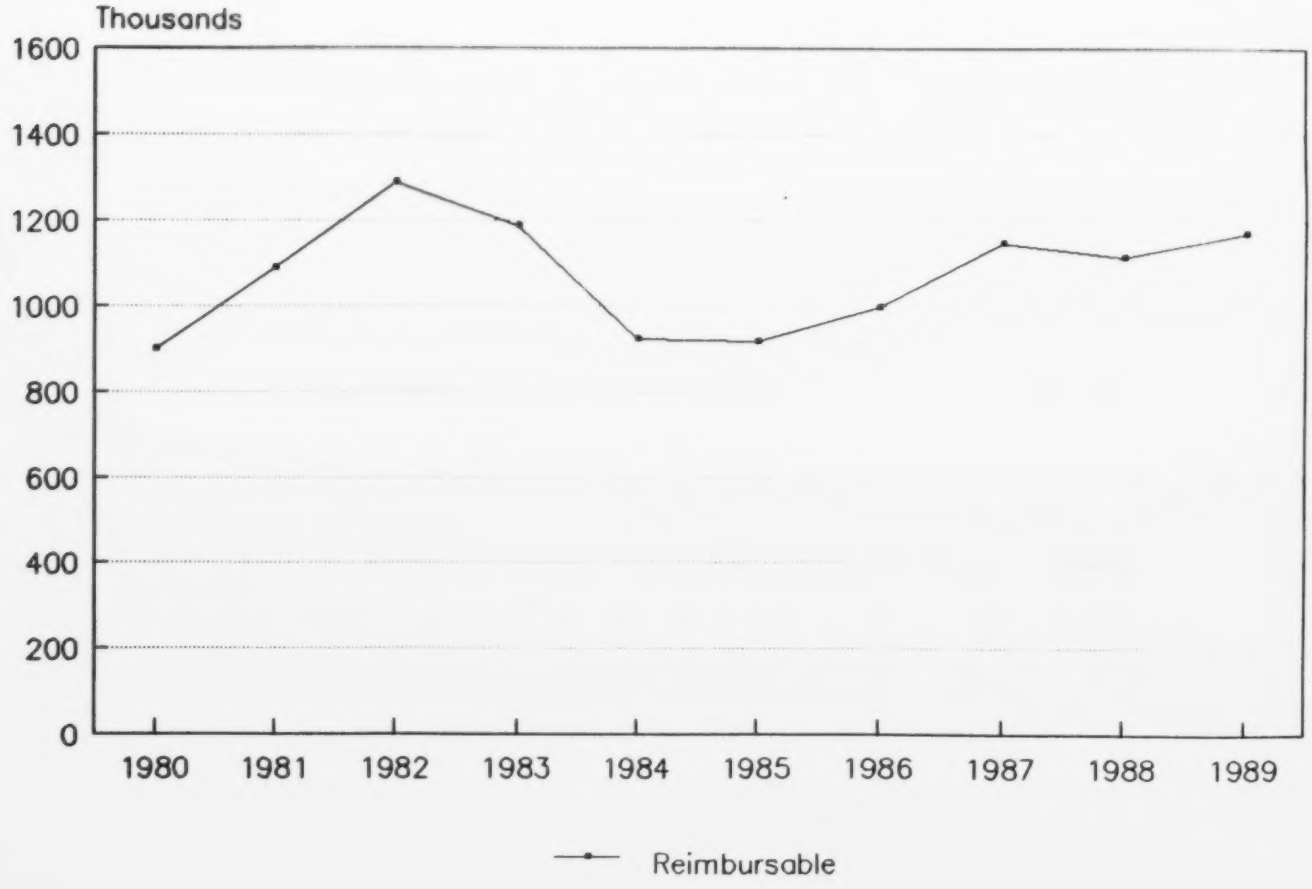


FIGURE 38

General Studies Credit Hours
FY 1980 – 1990

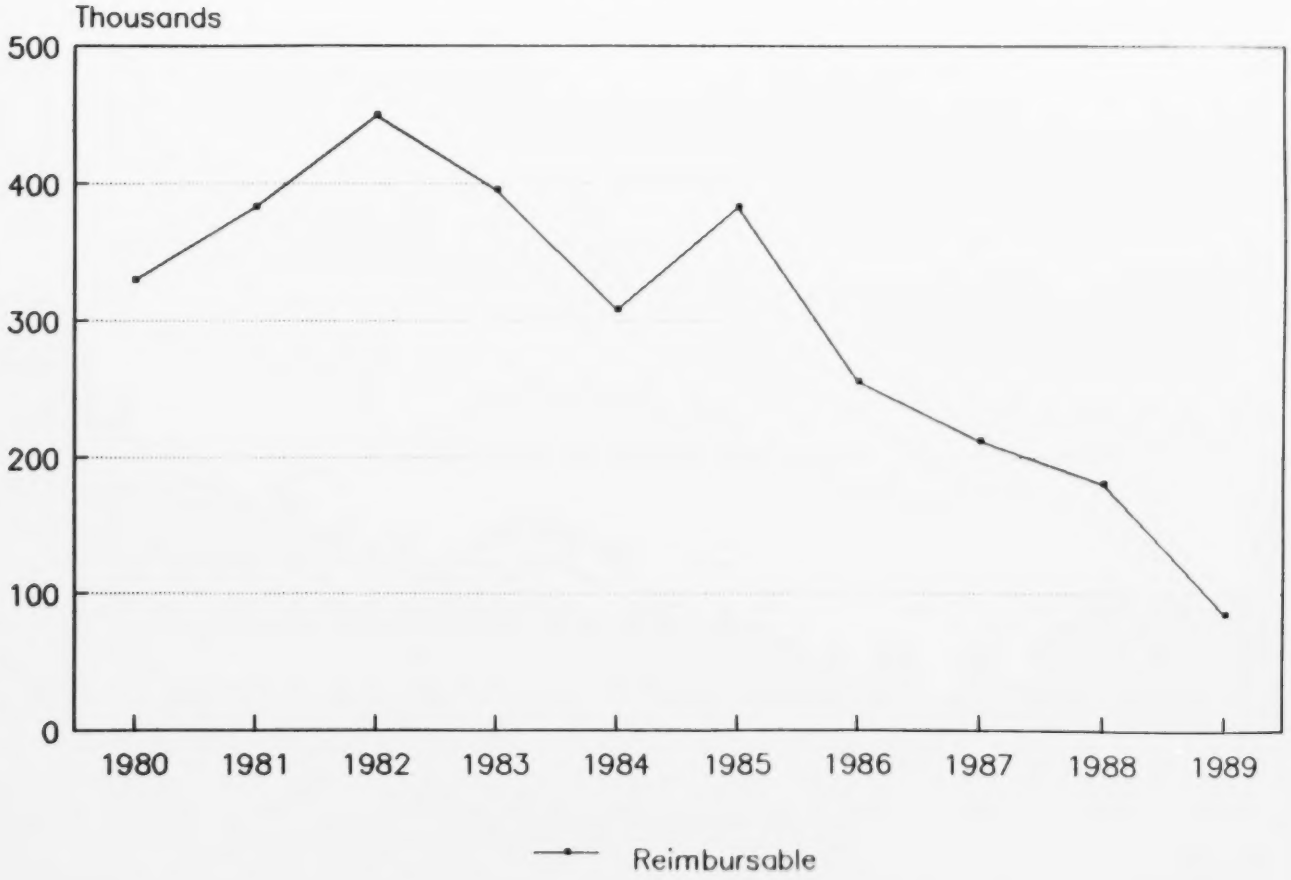


FIGURE 39

Total Credit Hours

FY 1980 – 1990

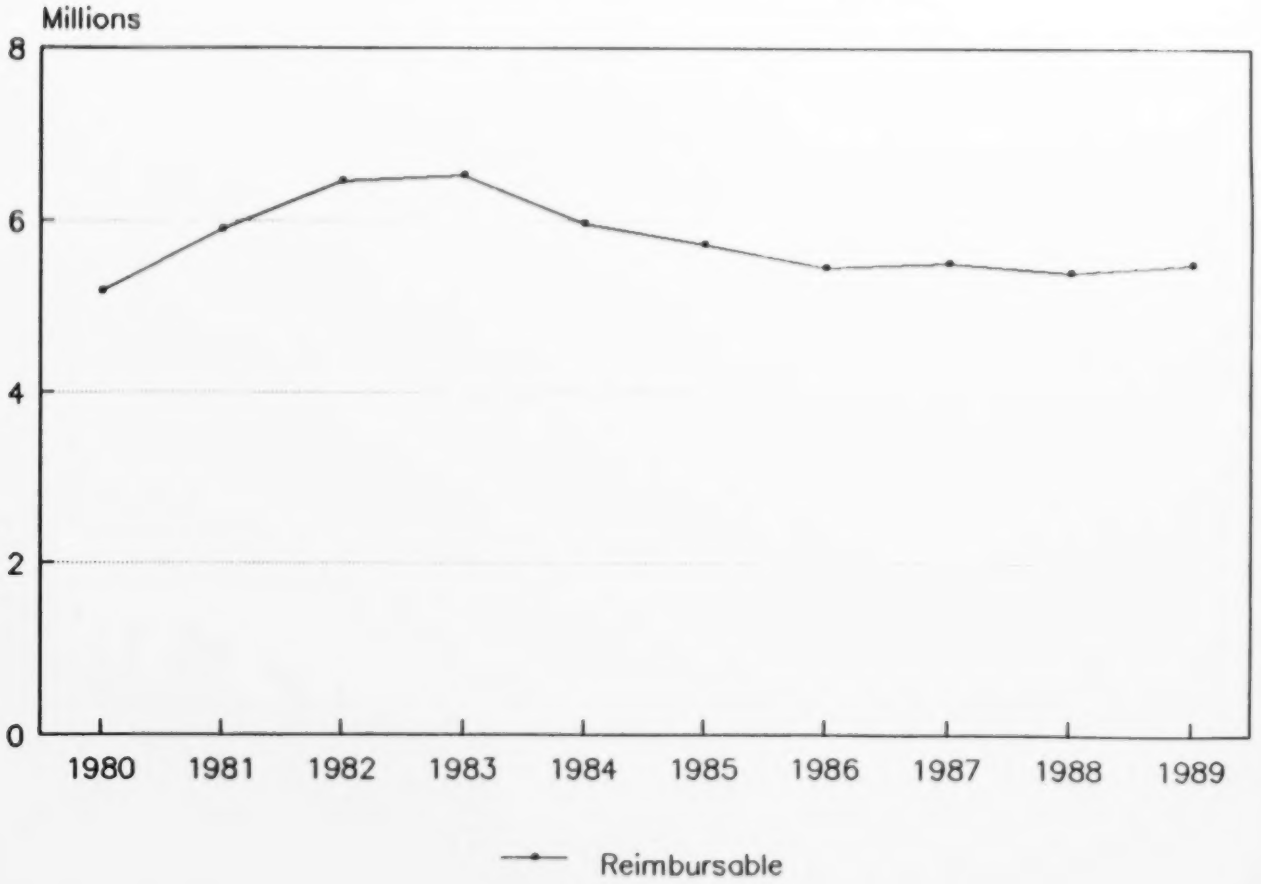


Table 4

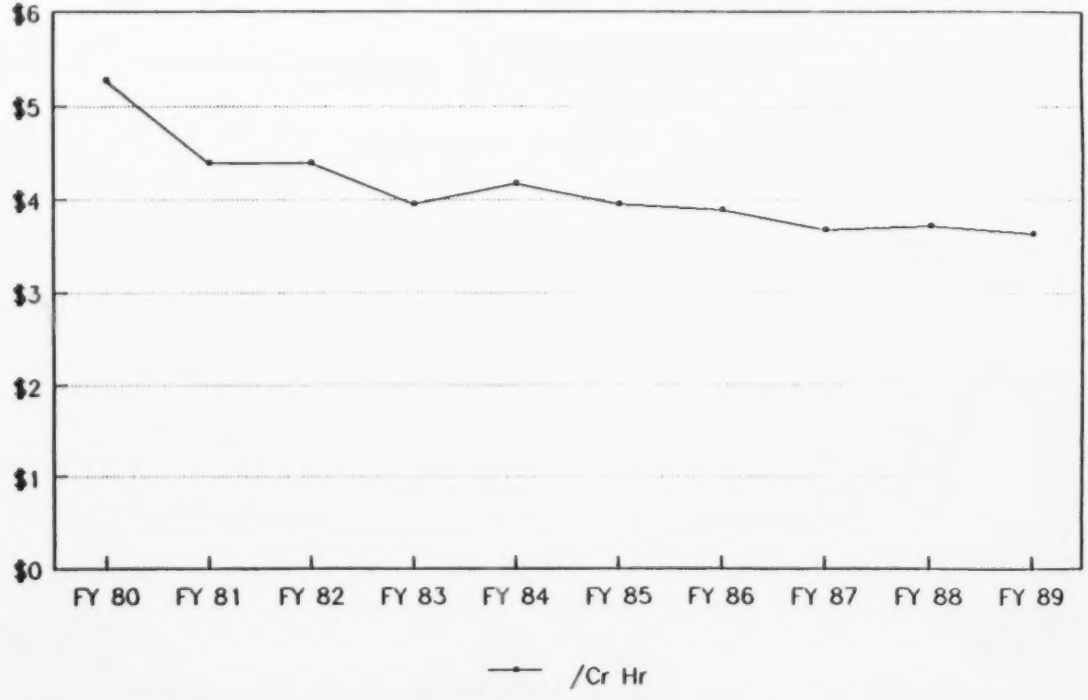
Facility Maintenance Costs

Year	O & M Costs Per GSF	BTUs Per GSF
1980	5.27	134195
1981	4.39	130608
1982	4.39	124753
1983	3.95	111440
1984	4.17	110868
1985	3.95	107246
1986	3.88	107553
1987	3.67	104010
1988	3.71	106962
1989	3.63	109958

FIGURE 40

O&M Costs Per Gross Square Foot

Adjusted for Inflation

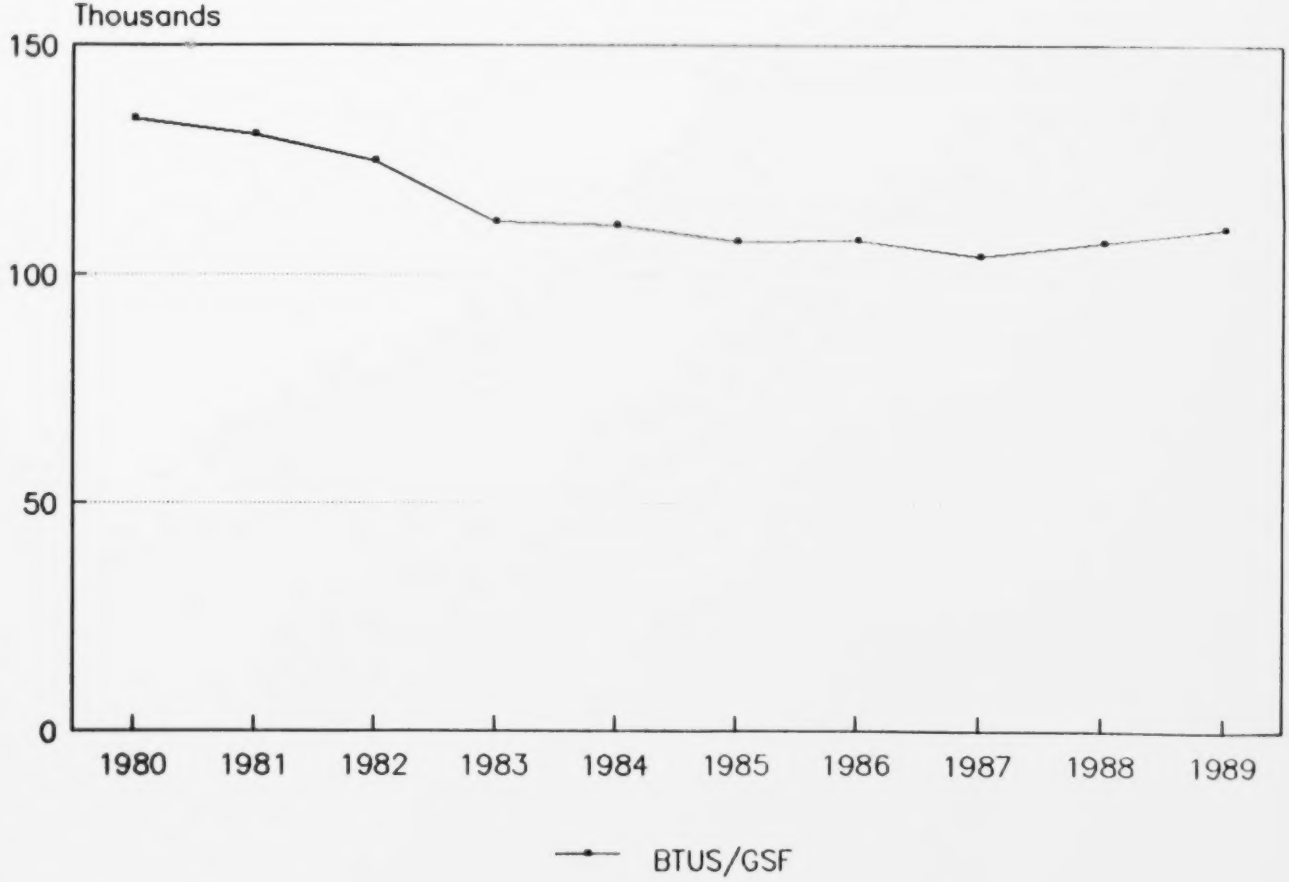


1983 Dollars

FIGURE 41

Energy Consumption

BTU's/Gross Square Foot



Appendix A

Description of Costs

Description of Costs

DIRECT SALARY COSTS: Faculty salaries and related cost of benefits for direct instruction.

DIRECT DEPARTMENT COSTS: Classified staff salaries and related cost of benefits, faculty salaries allocated for department activities (e.g., department chair), contractual services, materials and supplies, conference and meeting expenses, and instructional computer services.

DIRECT EQUIPMENT COSTS: Cost of movable equipment for instruction.

BUILDING RENTAL: Rental costs of all buildings which are rented by the college. Does not include Public Building Commission rentals.

OPERATION AND MAINTENANCE: Expenditures for those activities necessary to keep the grounds, buildings, and equipment operating efficiently. Also includes expenditures for campus security and plant utilities.

ACADEMIC ADMINISTRATION AND PLANNING: Costs include academic administration, course and curriculum development, academic personnel development and ancillary support above the department level.

LEARNING RESOURCES: This category includes all expenditures for the operating of the library, audio-visual center, instructional materials center, and communication systems used in the learning process.

STUDENT SERVICES: All costs for expenditures for services in the areas of financial aid, admissions and records, placement, and testing and counseling.

ADMINISTRATIVE DATA PROCESSING: Includes all costs for salaries, equipment, materials and supplies necessary to support the administrative data processing function. Does not include instructional data processing costs.

GENERAL ADMINISTRATION: This category consists of those activities which have as their purpose the development, general regulation, direction, and control of the college on a system-wide basis.

AUXILIARY SERVICES SUBSIDY: Includes only the subsidies paid by the district from operating funds for the operation of the food service program, bookstore, or other auxiliary enterprise activities.

GENERAL INSTITUTIONAL: Costs which benefit the entire college and are not readily assignable to a particular cost center. Examples include insurance costs, including those associated with tort liability, property, medicare, worker's compensation, and umemployment insurance; legal fees; and board of trustees expenses.

NET INSTRUCTIONAL COSTS: This cost includes actual operating expenditures for the instruction function. The expenditures include faculty salaries, direct departmental and equipment costs, academic administration and planning costs, and an allocated proportion of the support costs.

OTHER LOCAL COSTS: This category includes chargeback costs paid to other districts and instructional contract costs. It also includes the 80 percent federal share of college work/study expenditures.

BUILDING REPAIR: This category reflects the cost of major repairs, renovations, and remodeling which are locally funded and which are not considered to be a part of normal operation and maintenance of the plant.

BUILDING DEPRECIATION: In this item is included building depreciation of the local share of permanent buildings at a rate of two percent annually for 50 years and temporary buildings at a 12.5 percent rate annually for eight years.

FULL INSTRUCTIONAL COSTS: This cost includes the chargeback costs for sending district resident students to other community colleges, the 80 percent federal share of work/study expenses, building depreciation and repair costs, and renovations and remodeling costs in addition to the net instructional cost.

ORGANIZED RESEARCH: All direct costs associated with the organized research function are included in this category. Does not include institutional research expenditures.

PUBLIC SERVICE COSTS: Public Service includes non-credit community education and community service activities provided to the general community, governmental agencies, and business and industry.

TOTAL INSTITUTIONAL COSTS: This cost includes expenditures for organized research and public service functions in addition to the full instructional cost.

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